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NOVEMBER 2001

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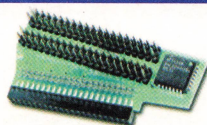
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Please specify when ordering.

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These monitors cannot display the standard
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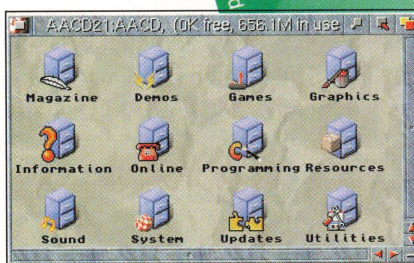


What's on this month's AACD?

Welcome to AACD 26. Instead of a brief list of a few of the programs on the CD, we now provide you with a little more detail on the parts

some of you seem to have overlooked.

We also use this space to cover any explanations needed to get particular programs running - but we cannot help you if you have trouble running some of the third-party software provided on our coverdiscs, in which case you should contact the author(s) concerned.



Magazine

In the Magazine drawer on each AACD you'll find support files for articles in the magazine. If the Guru has solved your problem, the files he mentions are in here. If you want to make your own MP3s, look no further. The occasional Last Month drawer contains files to go with previous articles that were too late for that issue's CD.

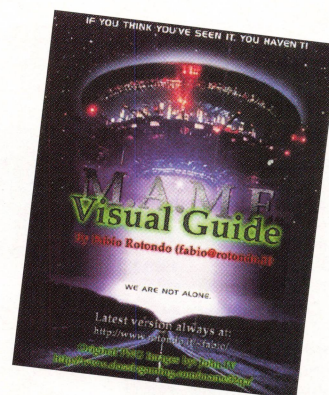
Autorun

The Welcome icon does more than load up the Amiga Active GUI. It also makes sure you have the necessary files available for the CD to work. If you don't want to use the GUI, it is possible to perform the other functions of Welcome without loading it.

Why not install Autorun from AACD26:CDTools/Autorun? This commodity sits in the background waiting for you to insert an AACD (it won't act on any other disc) and automatically runs Welcome, with or without the GUI.

If you run DOpus in Workbench replacement mode, install the AACD filetype from AACD26:CDTools/DOpus/AACDfiletype. This adds several entries to the popup menu on AACDs - the "Initialise AACD" option runs Welcome without loading the GUI.

Finally, the Setup icon in AACD26:CDTools will initialise the CD without loading the HTML interface.



MAME Visual Guide

This was covered in last month's MAME feature, too late to include on AACD25.

MAME Visual Guide is a series of PDF Index files containing all supported MAME games.

AMP 2

The latest version of this MPEG video player for PPC. As well as playing VideoCDs, this one will also play DVD files, although not the encrypted sort.

Roll your own MP3s

To go with our mini-Masterclass on CD ripping, this CD has all the software you need to extract audio tracks from CD, process them and convert them to MP3 format.

HTML and JavaScript tutorials

These were originally written for another magazine, but copyright has reverted to the author. The text made a good test for Txt2HTML, and here are the results.

Medication

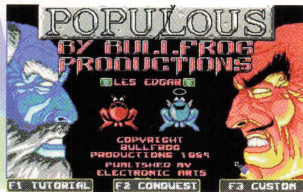
No, we're not suggesting you need therapy. This is a utility for Mediator owners that configures attached PCI cards through an easy to use GUI.



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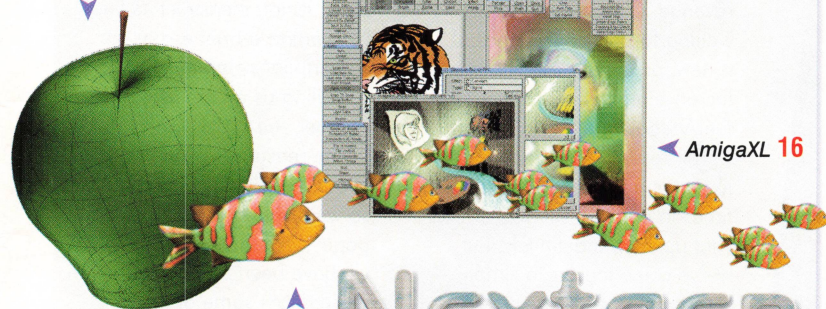


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- 24 Ooo AR! - Give your Amiga a permanent net connection with the AR-601 ADSL modem.
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- 42 Active Media - Enterprising individuals may appreciate this months Intelligent reviews.
- 52 Payback PPC - It used to be playable on an 060... but Payback now has added power!

- 12 Become the change... - Things are going to be different next month. Here's why.
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- 48 Warp3D Masterclass - Now you know the basics, it's time to get coding in Warp3D.

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- 30 AmigaDE Revealed - Amiga finally begin to clear the mist surrounding the AmigaDE.
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ACTIVE News

The latest news from the Amiga Industry, news@amigactive.com

Amiga Active is Going digital

The Amiga market is evolving, and this Amiga magazine is evolving with it.

After 26 issues, the name of the world's only remaining professionally produced, English speaking Amiga magazine is changing to encompass the Amiga Digital Environment and everything associated with it.

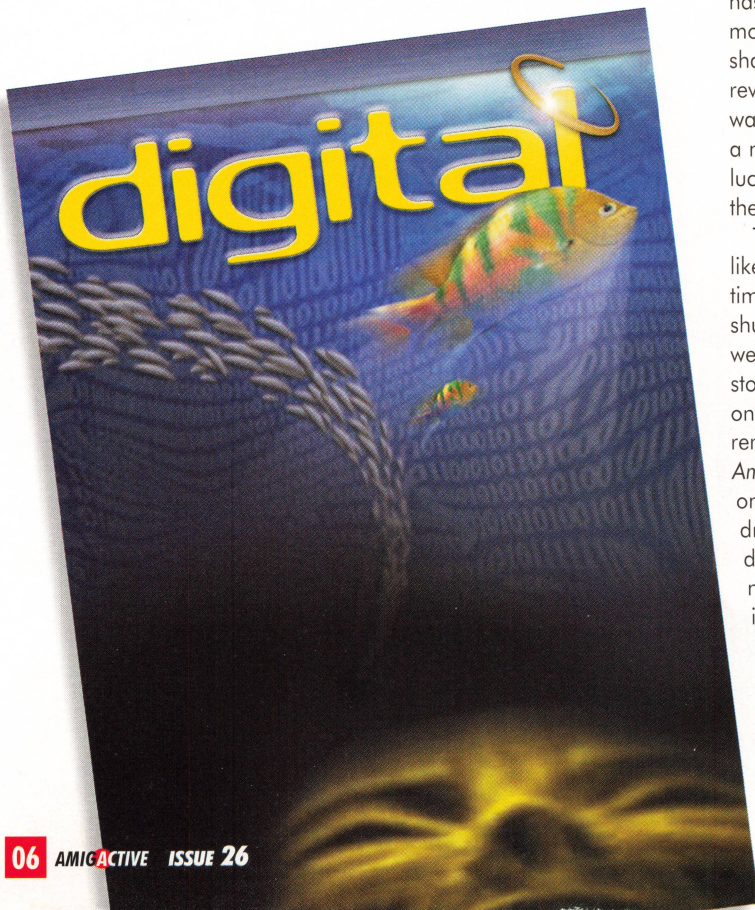
With the imminent release of the AmigaOne and OS4.0, it wasn't unexpected that the number of product releases in the 'Classic' Amiga market would dry up. Save for a few developments mainly in the field of PCI solutions and the occasional software update, this has been the case over recent months. We have also seen a sharp decline in advertising revenue. Clearly, everyone is waiting for the appearance of a new, potentially much more lucrative market centred around the AmigaDE.

The result is that a magazine like ours must change with the times in order to survive, or else shut up shop indefinitely. But we've come too far to simply stop now, so we're taking the only sensible option that remains: from next month, Amiga Active will be appearing on newsagents' shelves and dropping onto subscribers' doormats under a different name: **digital**. The next issue will be priced at a far more affordable £3.50 without a covermounted CD, which wouldn't as yet be appropriate to the wider market we are addressing.

Subscribers needn't worry: they will be compensated in the form of additional issues added to current subscriptions to make up for the difference in our new subscription price, which has also dropped accordingly as from the next issue (see page 57 for more details). Subscribers should also have received a letter detailing the changes along with their copies of this issue. If not, please let us know by sending a brief e-mail to subscriptions@amigactive.com or calling us on the usual number, +44 (0)1202 411111.

The reasons behind this change are many and complex, so we would ask you to turn to page 12 of this very issue where we have been able to explain in more depth some of the decisions we have had to make. While the change is more sudden than we would have liked, and has been largely forced upon us by prevailing market conditions, it isn't as dramatic as it may seem. A change in Amiga Active's focus has always been on the cards - we're just having to make that change more rapidly than many people expected us to.

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editorial

Defender Remix

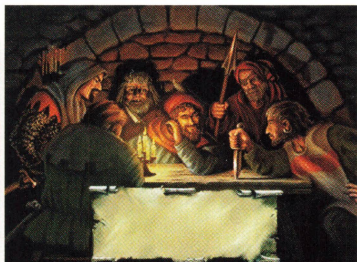
Cinemaware have announced that they will be re-releasing some of their ancient Amiga originals in a "digitally remastered" format - for PC and Macintosh. ClickBOOM appear to be involved in the project, so any Amiga version would probably come through them.

The recently revitalised Cinemaware company are producing new versions of several of their old titles for mobile platforms such as WAP and Nintendo's Gameboy Advance as well as working on

an entirely new sequel to Defender of the Crown, the first great Amiga game.

In the meantime, those impatient for more of that unique Cinemaware style will be able to play games such as the original Defender of the Crown, The Three Stooges, It Came from the Desert and Wings.

The games will be budget releases for the Christmas season, boasting major multimedia enhancements over the original versions. Take a look at the before and after shots reproduced here to see the difference.



Freespace Imminent

Hyperion Entertainment's port of Descent Freespace: The Great War is entering the final stages of production. Just before we went to press, Amiga Active was shown a late beta version of the game and can report that it's looking quite polished.



The final game should be available very soon and will require at the very least a 68060-powered Amiga with a 3D graphics card, or a PowerPC card to run the software rendering engine at sufficient speed should you not have a 3D graphics card. For more information on the game, visit the original publisher's web site at www.interplay.com/freespace/ or keep an eye on Hyperion's web site for an announcement of its release.

www.hyperion-entertainment.com ►

digital Dreams

So, the next issue of the magazine you hold in your cold, wintry hands won't be called *Amiga Active*. It's an outrage isn't it? After all this time, your favourite (we would hope) Amiga magazine is just changing its name with barely a month's notice. How are you, a loyal reader of this fine tome, going to cope? Why would we do such a thing? Well, as Lloyd Grossman would say, "Let's take a look at the clues..."

Our new name, *digital*, will open this magazine up to a much broader market, which can only be a Good Thing. If you don't agree, please leave quietly and take all of your belongings with you. After all, we want the rest of the computing world to read us - it's just unfortunate that the vast majority won't pick up a magazine with the word 'Amiga' on the front these days. Sure, a few might recognise it from a nostalgic point of view, but that's not good enough, is it?

"You could say," John Lennon once sang, "I'm a dreamer. But I'm not the only one." You see, we have aspirations above and beyond *Amiga Active* - always have done. We didn't start an Amiga magazine to appeal exclusively to the Amiga market of two years ago. No, we wanted to take the Amiga community into the developing world of digital technology to show everyone that hey, there **are** some people around here who know a good operating system when they see one and yes, there **are** still people who realise the importance of efficient programming and creativity - and we won't settle for anything less!

A lot of the reasoning behind the decisions we've had to make is laid out in our feature starting on page 12, so I won't repeat any of it here. Suffice to say that the world of computing would be a darker place without the Amiga. That's why we're shifting our focus and changing the name of the magazine, but not the team behind it or the values that have defined *Amiga Active* since our first issue. I will still be at the helm as Editor, should you wish to voice your opinions (the editor@amigactive.com e-mail address will remain functional, and your comments are always welcome - so you've no excuses for not letting us know what you like or dislike about the magazine) and many of our writers will continue to contribute with their views on the emerging technologies affecting the AmigaDE. We will, of course, be covering the AmigaOne and all things Amiga-related that are yet to come - but to do that properly, we must pay increasing attention to the market that will surround the Amiga's future.

So, I hope next month you'll join us, and the world will live as one. Sorry, am I being too unrealistic? Okay, how about everyone just buys *digital*? Keep your comments coming, and I'll see you next month as we embark on the next leg of our voyage.

David Stroud, Editor.



News in brief

Simple really!

Sebastian Bauer, developer of the SimpleMail Amiga e-mail client, has sent word that the next version will hopefully include PGP (Pretty Good Privacy) encryption support. "SimpleMail will be updated regularly, at least every month," he tells us.

sf.net/projects/simplemail/

Online Store Opens

Fore-Matt Home Computing now has an online store offering a range of software and featuring military-grade 128 bit encryption on orders placed over the site, presumably to reassure the truly paranoid Amiga shopper.

www.forematt.co.uk

Voyaging on

Vaporware have announced a new full release of the Voyager web browser. 3.3.117beta, as the latest version is known, is another step closer to a 'release candidate' for Voyager 3 with the new layouting engine. It is considerably more stable than

recent pre-releases, and has improvement in the download manager and graphics systems.

Voyager is available for 68k Amiga OS and PPC MorphOS. For more details and a download:

<http://v3.vapor.com>

CWCCC C,C,C,Closes

Luke Stowe regretfully informs Amiga Active that the Coventry and Warwickshire Commodore Computer Club has closed its doors due to a lack of interest.

"The few of us that are left are still keen Amigans," says Luke, hopefully. "Fingers crossed for the future."

Get on to Greed

Great Effects Development, creators of software such as Professional Filing System for the Amiga, have relocated their web site. Their old site, www.greed.nl may have already gone out of service by the time you read this, so update your bookmarks with the URL below.

<http://on.to/greed>

MorphOS Motion

Titan Computer have opened a new website for their forthcoming video editing package, MotionStudio. The program is being developed for MorphOS and the bPlan Pegasos motherboard.

MotionStudio is a non-linear digital video editing package with a simple, user-friendly GUI. It offers 40 processing effects, most of which can be applied in real-time on sufficient hardware. It also offers freely definable particle effects for fire, smoke and fog, and supports audio functions such as fade in, fade out and decrackle. MotionStudio will be able to load images in 32 different formats as well as saving in AVI and Quicktime Movie modes. It will use the Pegasos' FireWire port for fast Digital Video transfer.

MotionStudio will require at least a 400MHz G3 and MorphOS 1.0.

www.titan-computer.com/motionstudio/

Petro Roasted on Video!

Amiga show-goers who were unable to attend this year's Amigan-St Louis show in America at the end of March can now purchase a video of the main event - a "roasting" of Petro Tyschtschenko.

For \$15, plus \$10 shipping and handling, Bob Scharp will dispatch this Bounce-back video of the Petro Roast direct to your door. Witness Petro attending his last event as an official Amiga representative, and as a dancing baby in a video homage to the man himself.

This Petro-spective video is available to order now, although Bob points out that it is in NTSC format, not PAL - so you'll need the suitable NTSC compatible equipment to view it on. Payment can be accepted in Postal Order or Cheques drawn on a US account.

www.amiga-stl.com

Zip it Good!

It looks like issue 24's Mini Masterclass Zip drive competition had a lot of you stumped. All we asked you to do, to be in with a chance of winning a 250MB SCSI Zip drive, was to tell us how many times the word "zip" appeared on pages 22 and 23.

"The answer depends on the definition of the question," argued Stephen Harris, who was immediately disqualified for trying to squirm his way to the right answer with several guesses (all of which were wrong anyway! Muahahaha!).

"So you thought you could fool us all, huh? No such luck," claimed a plucky Niels Bache, who went on to tell us there were, "35 occurrences of the separate word 'zip' plus 9 more," but failed to actually give us the answer. Expecting us to do the maths for him means he too was disqualified. Harsh, but fair. Sorry Niels.

The correct answer was of course 44... 31 times in the main article, once in the title, once in the standfirst, once in the pullquote, once in the top bar, once in a picture caption, three times in the competition boxout itself and, craftily, five times in the various pictures.

Congratulations to our six randomly-selected winners, who will be receiving a shiny new 250MB SCSI Zip drive in the post shortly. They are:

- Mr. K. Lee, from Crawley
- M. M. Sharman, from Croydon
- Mark Hale, from Blackpool
- Jason Woodhouse, from Lincoln
- Mr. K. Mounsey, from Cumbria
- Pål Nygård, from Norway

Goodbye St Louis, Hello... Baltimore?

The Amiga shows organised by Bob and Diana Scharp and held in St. Louis, Missouri each year since 1994 have come to an end, at least for the foreseeable future.

"Unfortunately, we cannot continue the shows for now. There will be no Amiga 2002 show sponsored by us," Bob Scharp explained in an announcement at the end of September. "The good news, is the reason why. Diana and I are adopting a child. Our lives will be even busier than usual this year and next, so we will have to pass the torch, at least for a while, to others."

That torch appears to have been grabbed by Nova Design, who have stepped in with plans to hold a similar event on March 29-31 2002 in the Baltimore, MD area.

"We'll be working to have a completely professional show with the same community spirit that Bob Scharp had at his shows!" Nova Designs' Kermit Woodall told us. "The show will be called Amiga Expo - An Amiga and Alternative Platforms Conference. As the name suggests we're embracing things that are beginning to touch on the Amiga. QNX, Tao, Java, Linux, Palm, Psion and more. We're working with Amiga and other companies to reach out and bring in more Big Name exhibitors to draw in the crowds."

Those wishing to know more about the show, including a list of exhibitors, should visit the official Amiga Expo web site at the URL below. Any questions, meanwhile, can be e-mailed direct to Kermit Woodall or Bob Fisher via [kermit@](mailto:kermit@novadesign.com) and bob@novadesign.com.

www.amigaexpo.com

Elbox Triple Whammy

Not content with giving Mediator owners the use of TV and Soundblaster128 cards, Elbox have announced the imminent availability of their first 100Mbps 'Fast Ethernet' driver.

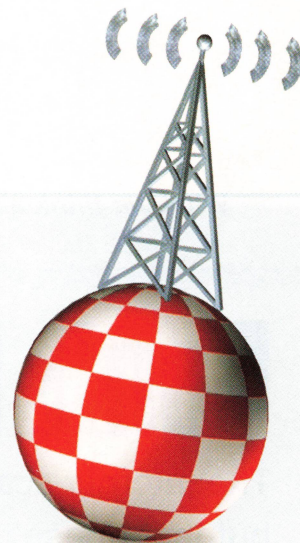
The driver will be made available to all registered owners of the Elbox Multimedia CD (see the review starting on page 20 of this issue). Based on the very popular and common Realtek 8139 chipset, it should give a huge increase in performance over the current 10Mbps cards that Amiga users have been limited to until now. 100Mbps Ethernet cards are available for around £20 from a wide variety of PC outlets. Various Amiga dealers should also carry a range of compatible cards. The total number of PCI card types supported by the Mediator busboard is now five, namely:

- Voodoo3, 4 and 5 graphics cards
(note that only the Voodoo3 is supported by Warp3D)
- ViRGE (2MB and 4MB) graphics cards.
- TV cards.
- Soundblaster128.
- Ethernet 10Mbps.
- Fast Ethernet 10/100Mbps.



www.elbox.com

Portability a Liability?



A few days ago I was chatting with a DE developer who was concerned that with the ever growing success of ARM and its range of processors, especially at the smaller end of the digital device range, one of the main advantages of the AmigaDE - namely binary portability - would become a hindrance.

His line of thought was sound. If more and more digital devices use the ARM processor family, the majority of the market will be dominated by just one instruction set, and so the need for binary portability would be reduced to the point where the small overhead inherent in that portability would become a liability. Rather like selling a translation service in Europe as everyone started speaking English.

Of course I gave him some comfort - the actual translation overhead is fairly minimal, and as devices become more and more powerful, the actual difference becomes harder to spot. Also, native tools can be written specifically for a processor to remove that overhead. Finally, the AmigaDE provides a comprehensive producer and consumer environment that makes it far more than just a one trick product.

However, it did give some cause for concern because, if one person could be thinking about that issue, so could others. The advantage of binary portability rests on the assumption that there will always be multiple processors, and thus multiple instruction sets from which to choose. So, if one did become dominant, that assumption crumbles.

Two days later, I read that Motorola had made a breakthrough in processor research, to do with the binding between the semiconductor and the insulator. The article claimed that this would enable low power processors at speeds of up to 80GHz, and one commentator described the discovery as significant as the creation of the first integrated circuit.

It brought a smile to my face because I remembered reading an article just two years ago in a PC magazine which asked if any graphics processor company could stay in business now that 3dfx had created a dominant position for itself. A year ago, the same question was being asked, except the name of the company alleged to dominate was Nvidia. Then the Imagination Technologies Kyro chipset appeared from nowhere.

Technologists are as guilty of focusing on the Next Big Thing as anyone, and it is often easy to forget that other truism - there is always something else around the corner. Indeed, Amiga hopes to be one of those Next Big Things. Our strategy is based upon the fact that there will always be choices, and we aim to offer a revolutionary choice - binary portability, courtesy of our friends at Tao.

Fleecy Moss,
Chief Technology Officer, Amiga Inc.

Rants and Raves

What we think about what we know.

Don't blame the 'net.

The Internet scares people. So it should, but that doesn't mean it's bad.

When something bad happens, it's only natural that people look for a solution. When something very bad happens, the desperation for a solution usually results in people spreading the blame far and wide, scapegoating easy targets in an attempt to find someone, something to blame for events they feel powerless about. Inevitably, things people don't really understand take a lot of the blame. The Internet has become a popular target for scapegoating.

It shouldn't be a surprise. The Internet is something new, something powerful, something that breaks a lot of the old rules. Whenever someone runs amok in a high street or high school these days, the gutter press is quick to blame the Internet. Look, he played games on-line, clearly on-line gaming made him do it!

Hello Internet

It was inevitable that in the aftermath of something as tragic as the September 11th attack on the World Trade Centre and the Pentagon, the need to find scapegoats that weren't hidden from attack in the Hindu Kush would be widely felt. Hello Internet.

The Internet allows people from all over the world to gather and to share information. Information is power. We hear that Osama Bin Laden's organisation uses the Internet to communicate - hardly surprising. There have been plenty of stories about how hard it is to track terrorists on the Internet, what with advanced cryptographic techniques allowing people to hide messages within pictures, for example.

The Internet is the supreme tool of communication. It offers an utterly unprecedented ability for people with very

limited resources to disseminate information or opinion widely. The fact that there are millions of websites selling every imaginable kind of conspiracy or snake oil makes that clear. It's also pretty clear that amongst the harmless nutters are a few very harmful ones.

The problem is that within any group of people there are a few destructive individuals, and if you empower people you are also empowering those individuals. The discovery of metalworking gave us better tools for building and agriculture, allowing us to build the foundations of civilisation, but it also gave the bad guys much sharper knives. Literacy allowed information to be passed across great distances and to great numbers of people, creating the environment that allowed all the great thinkers of history to flourish, but it also allowed people to sign death warrants. The machine age gave us the ability to mass-manufacture, which brought about a huge boost in the average standard of living, but also a huge boost to the ability to kill people.

The Internet brings us two-way mass communication. It allows people to share information and experience, to discuss, learn and work together. Some of those people are criminals and terrorists. Most are not.

The Internet may have been used by the perpetrators of the September 11th terrorist attack, but it has also been used by millions of other people who have found the Internet a useful source of information about world events, who have contacted friends and relatives they feared may have been caught in the attack, and who have discussed the events in almost every discussion forum on the 'net.



**"...everyone's
your neighbour."**

World-wide Watercooler

Whenever something really big happens, people inevitably discuss it at the water cooler or in the playground. This time they've been discussing it on the Internet too, but this forum differs from the more traditional ones in that instead of discussing it with their neighbours, they are discussing it with people from around the world, from every perspective on the events. The vast exposure to other world views that this has created for so many millions of people is something new to the world.

The great irony is that the Internet inevitably, due to its non-geographic nature, erodes all the social boundaries that stem from geographical divisions. The people behind the September 11th bombing may have used the Internet, but their message of hate and divisiveness is fundamentally contrary to the nature of the Internet. It used to be so much easier to declare war on people living far away, people you'd never met and could pretend weren't quite real, than on your own neighbours. When you have e-mail addresses of friends in countries all around the world in your address book, everyone's your neighbour.

Andrew Korn 

Interact

Agree? Disagree?

If what you've read on these pages has made you think, we'd like to hear your views. Write in or e-mail the usual (still active) address...

interactive@amigactive.com

Are you the Amigan People's Front?

We've got enough problems of our own. We don't want to spend our time listening to people who should know better airing their dirty laundry in public.

In a scene bearing more than a passing resemblance to one or more sketches from a Monty Python flick, some of the Amiga industry's key players continue to bicker and argue ("...about 'oo killed 'oo") and/or endlessly debate the future of our favourite platform via mailing lists or web forums - only this time, it's not funny. It's making a lot of people sick.

How can any sane person believe the Amiga has a future when a good proportion of those supposedly responsible for it seem to spend all their time bitching in public about who's fault such-and-such a situation is, or trying to prove they're not as bad as so-and-so? It may surprise some of you to hear that frankly, the Editor of this Amiga magazine doesn't give a damn (argh, more filmic parallels). Am I alone in wanting to see the Amiga - as a concept, an ideal, as a bunch of people who believe in the things the Amiga originally stood for - survive? Ideals like fun, creativity and opportunity. Those are the things that were important to me when I bought my first Amiga over ten years ago, and are the things I still care about today. Those were fun, enjoyable, inspiring times. Unfortunately, those times seem to have all but disappeared of late; and today, the Amiga name instead conjures up images of backstabbing and in-fighting among people who should know better than to air their dirty laundry in public.

Get on with it!

"Get on with it!" chime the cast of Monty Python and The Holy Grail, in unison. "Yes, get on with it!" yell the few Amiga lovers who'd rather not chuck in their hopes and dreams for yet another stifling, messy, faceless operating system, but are becoming increasingly worried by Amiga's silence amid

the incessant din of argumentative developers. A particularly apt "thought for the day" appears from my tagfile: a man called Booker T. Washington, who once said that, "You can't hold a man down without staying down with him." How true.

The Amiga name deserves more than this. Which is why, around three years ago, the people behind this magazine got together after the close of CU Amiga and decided that no, they weren't going to let the Amiga die. It is why, two years ago, after putting the first issue of their baby to bed and simultaneously hearing that Gateway were to dump the Amiga, they didn't throw their arms aloft and say, "oh well, let's chalk this one up to experience and write about Microsoft - they'll still be here in a few years' time." And it is why, today, those same people are moving forward and concentrating on the positive things to have come out of the last five years.

Outrageous

"Our approach is outrageous," commented a certain Fleecy Moss when Amiga announced their strategic relationship with Tao Group on January 8, 2000. "We look at what actual people want, and then give them the most simple, elegant solution." A shame, then, that almost two years down the line all we seem to be left with is a skeletal Amiga community being fought over by a bunch of people more concerned with protecting their bruised egos than creating something they can all be proud of. "Even calling it computing is falling into the PC trap," Fleecy continued in the official announcement which we printed in issue 5. "It is participation in the digital content universe, whether it be developing an application, playing a game, making your

own video, watching TV or buying S&M gear online." He was right (well, we'll have to take Fleecy's word about the S&M thing). But as we should all know by now, creating something valuable isn't a walk in the park.

Producing Amiga Active for the last two years has been a long hard slog, because we've continued to aim for brighter things



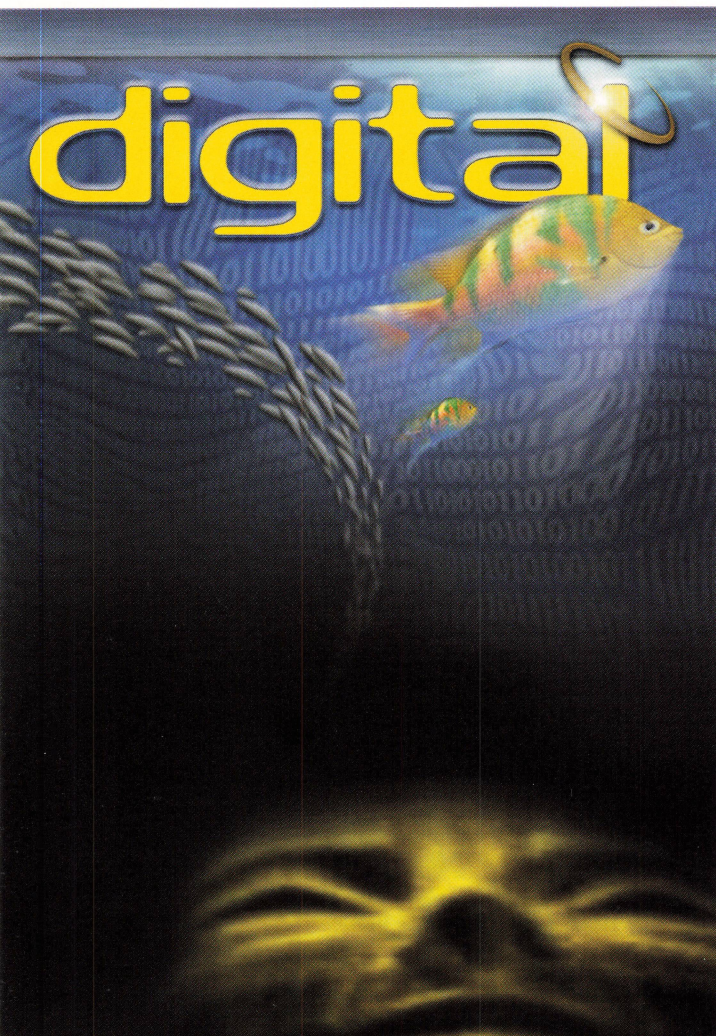
"The Amiga name deserves more than this."

and have refused to lower our standards. Sure, we can go on as we are for another six months, covering the pointless arguments and infuriating delays that are becoming more and more frequent in the existing Amiga market - whilst reporting on the occasional hardware or software release of any worth - or we can move forward.

So, are we "The Amigan People's Front"?

To put it politely (unlike Reg), no. We're the People's Front of Amiga.

David Stroud **A**



Become the Change...

Changes are a comin'. If you haven't read this month's news or the editorial yet, please do so - then come back to discover the hows and the whys.

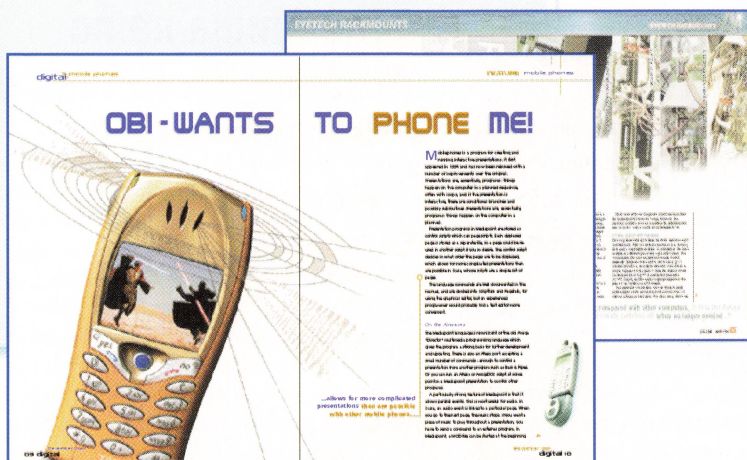
Do you remember the Compucolour? Probably not - it failed. Way back when Commodore computers came with green screens, the Compucolour home computer could produce text on the screen in rainbow colours. Bizarrely, this seemed amazing at the time, although the rogue thought did occur that it looked ugly as hell. Four years later when IBM released the first PC, colour was still not considered a priority. Eight years after the Compucolour, Andy Warhol was creating art on an Amiga and telling interviewers *"I love the machine"*.

Likewise, we giggled at WAP. It was ugly as hell. But we knew this new world wouldn't take as long to arrive.

Of course, the Amiga was never just about video graphics. Jay Miner's architecture devolved the tasks from the CPU to the custom chips, distributing the workload. Carl Sassenrath's kernel gave multi-tasking. It could do sound, it could run business applications, it could be programmed - and it played the most awesome games. Jay Miner was trying to create the ultimate computing device, something that could rule the roost in the massive market for home computer gaming, but also something that would empower its users, giving them an unparalleled creative tool with a human interface. Something which would bring the great power computing had to offer to bear on the presentation and manipulation of information of all types - multimedia, as it came to be known.

"We must become the change we want to see."

Mahatma Gandhi (1869 - 1948)



The Way of Amiga

As the Amiga faded from the view of all but a few determined souls, multimedia the way Amiga did it got forgotten. Cruder methodologies provided a drag to advancing technology - for all the benefits new hardware gave, those who knew, knew that multimedia wasn't just about displaying a lot of colours or playing a pretty tune. It's about doing them at the same time and making them fit together seamlessly. It's about allowing the user to play with them, order them and manipulate them. As they said, only Amiga made it possible.

The thing is, *Amiga Active* really shouldn't be here now. We're using computers designed a decade ago. According to Moore's Law on the ever-increasing power of computing, we are in theory using the computing equivalent of a horse-drawn cart. Take a look at the development of 3D graphics cards for example - the increase in power over the same period has been phenomenal. Computers should be so much better than the Amiga by now that we would never dream of using them. Yet we do, because there are still a few things, here and there, that Amigas do best.

The Amiga today is a specialist beast. It specialises in doing some things the way we want rather than the way everyone else does it. Like a bunch of classic car fanatics, we keep our Amigas polished and running, not because they are capable of breaking the speed limit, but because they can at least cruise with style.

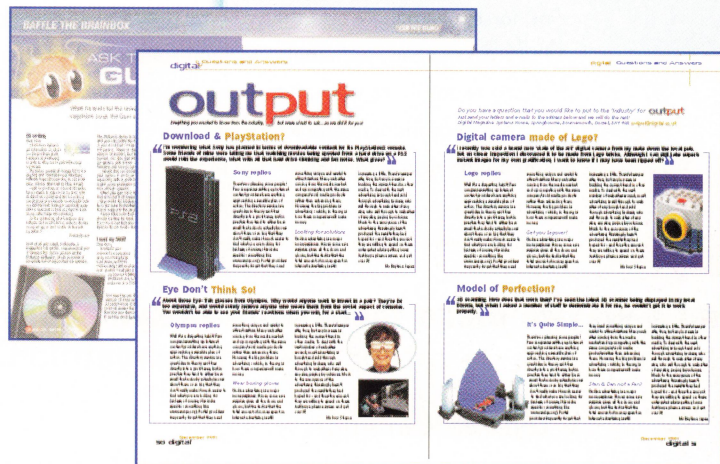
Looking back is both a danger and an opportunity.

Computing has been largely barren of innovation since the heyday of the Amiga. There have been few technological shifts that have genuinely provided something new, rather than just providing the same things faster, cheaper or more smoothly. Even then, they have all been on the fringes of computing; areas such as the development of wireless networks and the palmtop PDA format.

It's no wonder we chose to look back to a time when a small group of engineers dreamed up a computer that was designed from the ground up to utilise an architecture which promoted multimedia functionality rather than just throwing raw horsepower at the problem - an approach that brought together a range of technologies and dared to take the risk of showing the world what could be done.

"Change is as inexorable as time, yet nothing meets with more resistance."

Benjamin Disraeli (1804 - 1881)



Opportunity and adventure

Looking back is both a danger and an opportunity. It is an opportunity because only by looking back can we apply the lessons of the past to the future. It is a danger because by looking back too long we run the risk of never looking forwards.

For the last half a decade or so, people who have been looking forwards have generally seen that the world of computing is diversifying. Computer games are becoming ever more mainstream in entertainment; our mobile phones and even payphones have computers inside them; our televisions and hi-fis are growing CPUs and internet connections. Yes, people are even finding reasons to put more computing power into domestic appliances or cars than you found in home computers or spaceships not that long ago.

It doesn't take a genius to figure out that with so many diverse functions being performed by digital devices (i.e. computers of every sort), more and more of the sea of information that makes up the modern world exists in digital form. With computer typesetting replacing moveable type, newspapers all exist digitally. Thanks to the advantages offered by digital broadcast, audio visual content is becoming increasingly digital. The advantage of digital production means that more and more movies are beginning to go digital. Better CCDs mean much of photography is going digital. Audio has been largely digital for years, and developments in

- compression technology only make digital formats more advantageous for audio. As more people use computers in every day life, more of the things we do - shopping, banking, writing letters - happens in the digital domain.

If innovation continues to stagnate, this explosion of digital content will be met with the same crude application of horsepower the world threw at multimedia - but with the cracks already apparent, such an explosion of content clearly needs more than an increase in processing power. We are once more in a position where we need something new to deliver on the promise of current technologies, just as we were when Jay Miner and his team delivered the original Amiga.

...find a way to make them work in symphony rather than in competition.

Look back in Anger

Fortunately, there are those who look back at the Amiga and realise that with a little thought, we can meet the challenge. For the Amiga's creators, the challenge was to take the advances the world awaited in several areas of media - video, graphics, sound - and find a way to make them work in symphony rather than in competition. Today's challenge is to find a way of allowing a much wider range of digital content to work together. This is the key to the next generation of computing as surely as the Amiga was the key to realising multimedia in the last.

The reason we started *Amiga Active* when we did was not because we wanted to look at the past, but because we wanted to look to the future. We believed in the Amiga. Not as a going concern - the ten-year-old hardware has been on the last legs of viability for an age now - but as a concept. Elegance. User friendliness. Controllability. Openness. The computer that inspired you to play, to experiment, to create. The multimedia computer. We believed that concept was the best way to make the future work. We weren't alone.

Out there in the world of companies striving to be a part of the future, there are other people who have a broadly similar view of the way the world should work. Some, such as Chris Hinsley (who developed Tao Group's core technology) and the guys at Amino, had the Amiga to inspire them. Others have arrived at this view through their own analysis rather than by looking at the Amiga. Amino went on to buy Amiga from Gateway and become the new Amiga themselves, and Tao provided that same technology for their new foundation. This was an Amiga future we believed in, and one we wanted to be a part of.

Going digital

When Amiga Inc. started talking about interoperability, superior multimedia performance, device independence, network transparency and all those other fave buzzwords, we knew they were going to take the Amiga in the right direction - and the one we felt it had to take if it was to play the same role in the era of digital content as it did in the era of multimedia. We were happy to go along.

With the development of new communications technologies and the evolution of operating systems, middleware solutions and content for new electronic devices, a whole world of multimedia and entertainment will soon begin to flourish. So, just as Amiga is developing a Digital Environment, *Amiga Active* is developing into a magazine for that environment. Sensibly, we've decided to change the name of the magazine to suit. Under the new name of **digital**, *Amiga Active* will be evolving into a much more comprehensive guide for the digital age.

From the very first discussions we held while planning this magazine, the fact that the market was changing - *had* to change - dramatically was at the forefront of our minds. The way we designed the magazine in terms of format, sections and layout was intended to meet the needs we anticipated as well as provide for the remainder of the classic market while the future developed.

"They always say that time changes things, but *you actually have to change them yourself.*"

Andy Warhol (1928 - 1987)



We knew the magazine would evolve, so we didn't create the magazine we wanted - we created a magazine we knew could become what we wanted it to be, once the market had grown enough to justify it.

The change you will see between this issue and the next is far more dramatic than any we anticipated - but we expected to be there already by now. The market has not changed as fast as it could have done - the dramatic collapse of investment in the technology sector as a reaction to the Internet bubble bursting slowed things down for the whole technology market, and that slows things down for us. Had things gone according to plan, we would have reached the stage we're getting to now around a year earlier. Instead, we have done what was practical in terms of covering the new market whilst struggling to fill the rest of the magazine with things from the old one. We expected to gradually replace the ever-thinning range of classic Amiga stuff with an ever-increasing range of next generation Amiga stuff, and to replace stories about the cutting edge of yesterday's technology with stories about the cutting edge of tomorrow's.

"Never doubt that a small group of thoughtful, committed people can change the world. Indeed, it is the only thing that ever has."

Margaret Mead (1901 - 1978)



We have to go somewhere to keep our feet in the water...

Inspiration for the future

At this point, we stand at a meeting of tides, one ebbing while the other flows. The current market has dried to a trickle. The new one has just started to creep up the beach. We have to go somewhere to keep our feet in the water, and so the classic Amiga gets left behind.

That's hard for us. We've lived with it for so long. Before you panic, please understand that we're not dropping Amiga - far from it. The wider digital market is going where Amiga is going - and as we said before, we want to go along for the ride.

OS 4.0 is Amiga's first step, taking the strengths of the Amiga's past and applying them to the problems of the future. Amiga see it as the path to their host system that would act as a central hub to distribute digital content throughout the connected and networked facilities available to it - rather like the way the Amiga distributed its workload to the custom chips, in fact. AmigaDE is the next step for Amiga in managing and presenting that content in the correct way. OS 4.0 and AmigaDE are a part of the growing digital world, and a part we have a particular interest in, because it's the path taken by those who remember the lessons of the original Amiga.

The Amiga will continue to serve as an inspiration, but not as a source of reviews - except perhaps where it takes on the role of a content engine for future systems as with emulation, for example. It's a shame, but it is a hobbyist thing now, too small to support a professional magazine on its own. We're enthusiasts ourselves, but it's not a living any more. We'll leave that to enthusiast magazines and websites, and think ourselves lucky that there are people like SEAL doing such excellent work in those areas.

Striding forth

Right from the start, we've tried to drive the market forwards, to ensure that it didn't get stuck in the past. We've featured new technologies from the outset rather than accepting a position as technological second fiddle to the PC crowd. We introduced our Nextgen section, focusing closely on this new and burgeoning market, and have since expanded on it. Now it is time to remove the shackles from Nextgen and let it become the magazine. It would have happened gradually anyway.

So we step forth, taking those Amiga values with us, just as the character on the cover of our very first issue did, waving the boing ball-emblazoned flag as he went, into the digital world. We're off on the same train that Amiga, Tao and an increasing number of other companies are now boarding. We hope that you'll come with us.



AmigaOS



A first look at the Amiga OS XL package, and the two emulators contained within.

AmigaOS XL, the officially sanctioned emulation system from Haage & Partner, is approaching market readiness. With just a few tweaks to make and bugs to iron out, the AmigaOS XL package should be ready for release pretty soon now, but with typical impatience we wanted to know more sooner rather than later.

The AmigaOS XL package actually contains rather a lot of parts. Firstly, there are two separate emulators, AmigaOS XL and Amithlon. Both use the JIT (Just In Time) emulation engine developed by Berndt "Bernie" Meyer, providing a very fast emulated Amiga environment. They do this, however, in different ways.

Back to QNX

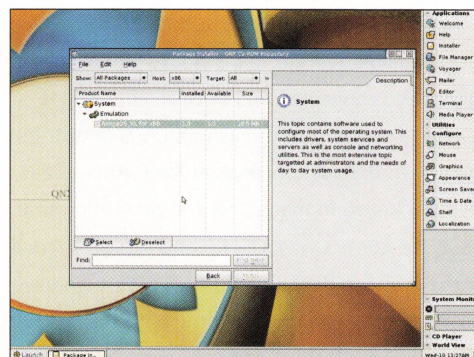
The AmigaOS XL package uses QNX's highly efficient microkernel real-time Operating System, QNX RTP (supplied). Amiga OS, while not being a genuine real-time OS (in other words when you perform an action, the OS does not guarantee to operate on that action within any given time frame), is efficient enough at sharing and prioritising resources that it acts very much like one. Windows does not - one task will often leave you waiting for another task to complete. QNX, as a real-time OS, behaves in this respect similarly to Amiga OS rather than Windows. It's also why Haage & Partner chose it as the foundation for the emulation, just as Gateway did for the OS a few years back.

If OS installation is something that gives you the shivers, you'll be pleasantly surprised with QNX. The installation is a breeze just so long as you know how to partition your drives or have a spare drive to install it to, and if you don't, then you can always just create a hardfile installation. This is simplicity in itself, handled by a quick and easy installer under Windows.

Installing AmigaOS XL on QNX is simply a matter of inserting the CD and telling the QNX installation package handler utility to look at the CD. It identifies the AmigaOS XL package, which then installs with a click. AmigaOS XL is then ready to launch.

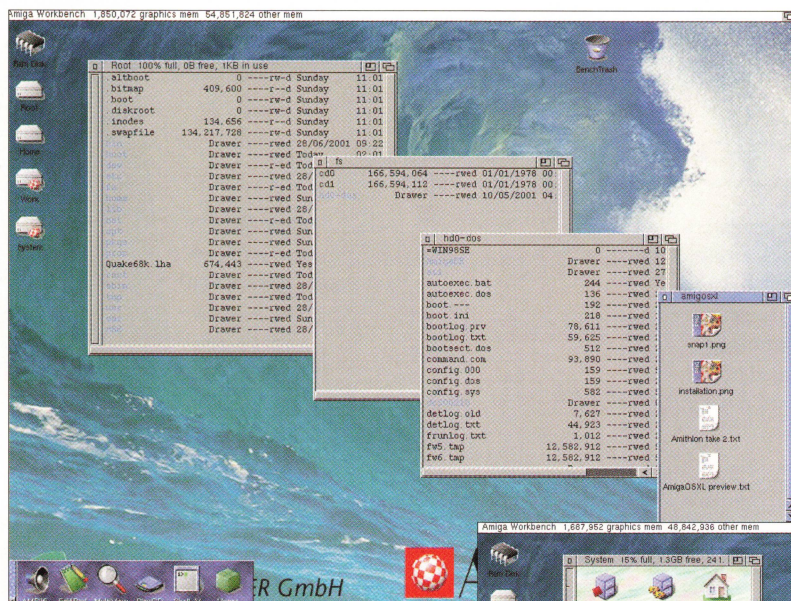
In theory, using QNX gives AmigaOS XL a major advantage over Amithlon - QNX supports a wide range of hardware, while Amithlon hardware requires specific drivers. However, for some reason AmigaOS XL just didn't want to work with the drivers for my ATI Radeon graphics card - from the look of it, some kind of sync rate clash between the AmigaOS XL P96 drivers and the QNX Radeon driver. I had to set QNX to use the basic VESA mode drivers to get AmigaOS XL to work, which means reduced performance, and hideous 60Hz refresh rates.

"You can't mistake this for a "real" Amiga for long, because it leaves any 68k Amiga trailing in its wake."



Above: Installing AmigaOS XL is a breeze.

“Yep, this is an
Amiga with Virtual
Memory...”



Left: Access the host files system, and even the host of the host, via Workbench.

Below: AmigaOS XL strutting its stuff. Note that the Internet connection required no set-up whatsoever - AmigaOS gets it from QNX, and QNX configured itself automatically from Windows.

Onto the Amiga

Running the emulation provides you with an AmigaOS 3.9 environment with pretty backdrops and icons - a welcome change from the traditional 4-colour startup that rarely impresses under emulation on a machine that is normally displaying in 24 bits. OS3.9 really is a major improvement over earlier versions of the AmigaOS in terms of providing a comfortable experience out of the box, although as with all clean AmigaOS installations, it is necessary to add a few Workbench utilities (or DirOpus) to make it as good as it can be.

Once the emulation is running, you'd be hard pressed - at first - to tell it apart from a real Amiga. Everything moves as smoothly and cleanly as we've come to expect from Amigas, although even with VESA mode drivers the graphic drawing was far faster than my Amiga with its dated graphics card. The sound is flawless (something I've never found WinUAE quite managing). There's no stuttering mouse to give it away, no sudden Windows-inspired hard drive thrashing - just smooth, quick, enjoyable AmigaOS.

Only the fact that the default Workbench backdrop has "AmigaOS XL" writ large upon it is a giveaway. Apart from that, the biggest clue that this isn't a "real" hardware Amiga comes the first time you try to run anything really demanding. You can't mistake this for a "real" Amiga for long, because it leaves any 68k Amiga trailing in its wake.

Almost everything about AmigaOS XL is fast. Opening windows is fast. Starting applications is fast. Rendering complex web pages is fast. Processing images is fast. About three years ago, Petro Tyschtschenko famously commented on how much easier things would be if there were a "200 MHz 68080" to run AmigaOS on. Frankly, AmigaOS XL on a high-end x86 box would make such an Amiga look sluggish.



The XL difference

AmigaOS XL is different from WinUAE to use. You don't need to worry about configuration as everything is configured for you. In some ways this is a downside, as it means you can't easily create multiple configurations to suit your application the way you can with WinUAE, but then as AmigaOS XL doesn't handle the full chipset emulation, you're going to use it for high-end Amiga use anyway, not running old games, so there's little real need for such flexibility.

AmigaOS XL comes with a preferences utility that runs under Workbench, in the Preferences drawer. This allows you to specify audio, memory and screen ratio correction settings. It also has a tick box for VM. Yep, this is an Amiga with Virtual Memory, although as with all VM it's slower than using real memory and given the gulf between typical memory available on x86 boxed and typical memory requirements of Amiga systems there's a good chance you'll have enough anyway.

“This really adds some extra functionality...”

Speed

We have yet to run a side-by-side comparison of the emulators on the same hardware, but a few quick tests with Quake (Quake68k from Aminet/game/shoot, timedemo demo1) give some idea of what to expect. The AmigaOS XL test shouldn't be compared too closely to the Amithlon one, as it probably suffered from video driver issues and certainly suffered from running from a hardfile rather than a partition.

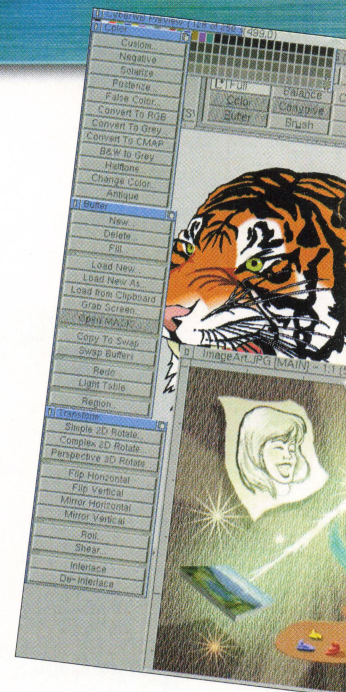
Amithlon (1.4GHz Athlon)

Resolution	Frames/sec
600x480x8	43.6 fps
800x600x8	30.9 fps
1024x768x8	20.4 fps
1280x1024x8	13.0 fps

AmigaOS XL vs WinUAE (same machine, 1.2 GHz Athlon)

Resolution	XL	WinUAE
320x240x8	43.9 fps	29.4 fps
800x600x8	13.9 fps	7.3 fps
1024x768x8	9.0 fps	N/A

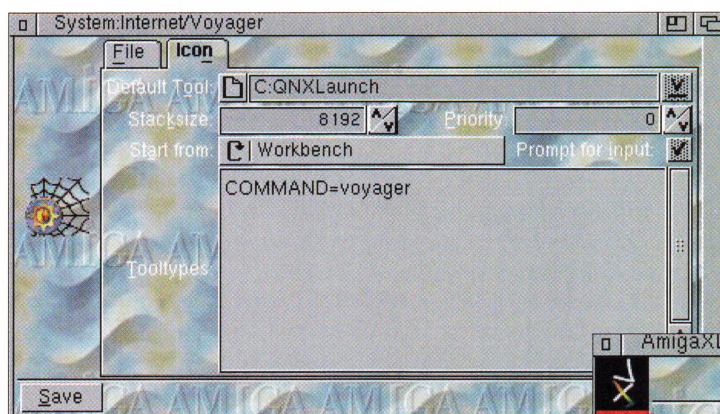
Right: ImageFX worked exactly the same as on an '060 Amiga, but more than ten times faster.



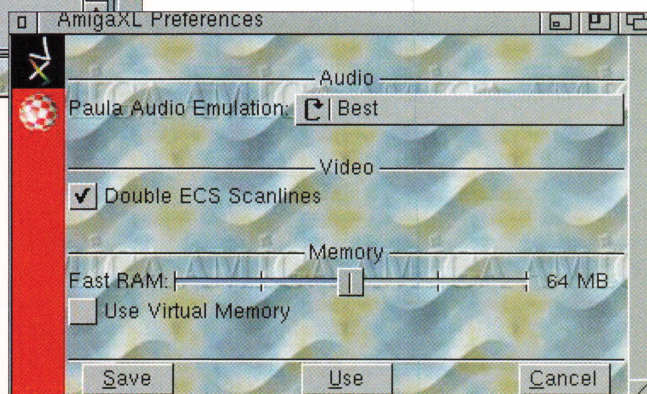
Another nice trick of AmigaOS XL is a small utility called QNXLaunch (pictured, below left). This simple program launches an application from the host QNX OS. It can be run from the command line - or, indeed, as an icon tooltip - so if you want your MP3 files to be played in the QNX media player, you could set the default tool to “QNXLaunch” and set a “COMMAND=PHPlay” tooltip.

This really adds some extra functionality to the Amiga environment - after all, with the media player and QNX Voyager browser (not the same thing as Vapor's Amiga Voyager browser), there is support for many of the modern file formats the Amiga cannot handle.

Unfortunately it switches back to the QNX desktop to open these applications rather than running them on top of the Workbench, so it's really only useful for passing local files to host applications. Being able to click on an icon for QNX Voyager on your desktop and waiting for the screen to swap is really not that much easier than waiting for the screen to swap and clicking an icon on your QNX desktop. However, Haage & Partner have added a nice touch to retain the Amiga feel of the operation - a title bar appears at the top of the QNX desktop while AmigaOS XL is running with a standard Amiga screen switching icon in the corner, so that you can swap between Workbench and QNX screens as easily as between multiple Amiga screens.



Above: QNXLaunch allows you to launch QNX applications from Workbench icon tooltypes.
Right: The AmigaOS XL Prefs tool.





How did it perform?

After clicking a few buttons and opening some windows to get an idea of the general responsiveness of it, we started up ImageFX, loaded one of the example images and went straight for the Gaussian blur. This is one of the most CPU intensive operations in ImageFX, and took around three seconds to apply a heavy blur to a 500x400 image. When trying the same operation on an A4000, using the PPC Gaussian operator, it took twenty seconds - over six times as long. The 68K version took nearly a minute to run the same operation.

It is not only CPU emulation that is fast. Amithlon has access to the PC's hardware, such as ATA100 hard drives. We loaded up MasterISO and used the system test section to check the drive performance. It managed 35MB/s, which makes the ultra-wide (and ultra-expensive) SCSI drive on our CSPPC look pretty poor. This is one of the main benefits of Amithlon. PC hardware may not be particularly efficient or elegant, but it is extremely fast and very cheap. Not only is higher performance now available, it is available at prices far lower than Amiga users are used to paying.

SoundProbe loaded and edited sound files as expected, although we weren't able to hear the output, as the sound chip in the test machine was not supported in the pre-release version we tested. Candy Factory also installed and ran as expected, but highlighted one of the problems of using PC hardware. Candy Factory comes on CD with an update on disk, and PC floppy disk drives cannot read Amiga disks. The CD version of Candy Factory is rather unstable, which at least gave us the opportunity to see how faithfully Amithlon shows a Guru.

Just like the real thing

What impresses us most about Amithlon is that, like AmigaOS XL, it didn't feel like an emulator. Running Directory Opus in its Workbench replacement mode, it felt just like a normal Amiga with a graphics card, except for the increased speed. If you want to play games, particularly non-retargetable ones, Amithlon may not be the best choice. But for running application software at speeds far in excess of any hardware Amiga ever made, this should definitely be worth a look.

...just like a normal Amiga with a graphics card, except for the increased speed."



Left: Candy Factory, another program that worked authentically with Amithlon - the early unstable version even crashed the same as on a real Amiga.

Unlike UAE or AmigaOS XL, Amithlon completely takes over the host machine. The Amiga Operating System is the only OS running; Amithlon uses a specially created Linux kernel to boot. This takes care of booting the computer and loading the emulator and handles communication between the emulator and the underlying hardware. You don't see any evidence of Linux, apart from the kernel messages that scroll up the screen on a cold boot. Even when something gurus the emulated Amiga, you normally only see a normal Amiga reboot.

Starting up

Amithlon boots from CD by default. The CD starts the emulator and looks for a suitable hard drive to boot from. You can set aside a section of a PC hard drive that is seen by Amithlon as an Amiga drive, which you can partition. You can also use a dedicated Amiga drive. Amithlon reads the RDB (Rigid Disk Block) from an Amiga drive and handles any filesystem that a real Amiga will. There are a few files specific to Amithlon, but once you have copied these from the CD, you can remove your hard drive from your real Amiga and boot your PC from it.

The most important aspects of any emulator are compatibility and performance. How many of your existing programs will it run and how fast will it run them? There is a trade off between the two; the more compatibility you build in, the less performance you'll have. This is particularly true of custom chipset emulation, so the Amithlon developers decided to omit custom chipset emulation in favour of maximum speed. This means no AGA or ECS screens and no Paula sound. Using Amithlon is like using an Amiga with a graphics card and sound card.

There is emulation of a basic 4-colour screenmode, so you can access the early startup menu or boot without startup-sequence into a shell. Because of this, Amithlon is best suited to productivity applications and games that retarget to a graphics card.

- Name Mediator Multimedia CD
- Price £24.95
- Supplier Elbox
- Contact Power Computing - phone +44 (0)1234 851500 or visit www.powerc.com

ACTIVE Reviews

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Mediator Multimedia CD



PCI on the Amiga finally gets another leg up thanks to Elbox's latest set of drivers for Soundblaster and TV Tuner cards.

After the best part of a year since the Mediator's initial release, new drivers for something other than graphics and network cards have arrived which allow control of Soundblaster128 and TV tuner hardware - but has the delay been worth it? Maybe it has, thanks to the sheer number of chipsets supported

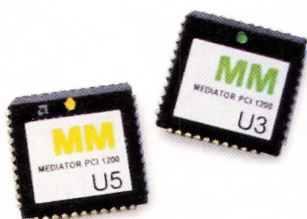
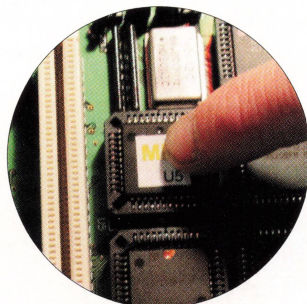
by these newly released drivers - four SB128 chipsets and nearly 50 different TV card chipsets. So let's take a look.

Once you receive your Mediator CD, the first thing you should do is register with Elbox. Registration entitles you to free updates which have been released since the CD was produced (at the time of writing there have been two updates).

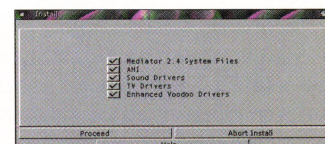
Before installing anything from the CD, however, you need to upgrade your Mediator hardware with the latest 'mach' chips which contain a key to enable the new drivers. They also remove the 4MB memory window problem experienced with some earlier Mediator boards. A quick guide for installing these chips should

be available on the unofficial Mediator support page at www.amiga-mediator.co.uk by the time you read this.

After installing the upgrade chips, you can then plug in a supported Soundblaster or TV card, boot your system and run the PCInfo command (which you should have installed when you got your Mediator in the first place) from a shell to check that any new boards are recognised. Installing the drivers is achieved quite painlessly via the standard Amiga Installer interface. All the necessary files are copied across to your boot partition - you can select which parts to install from the CD - and after a warm reboot you are ready to use your new PCI cards.



"...you need to upgrade your Mediator hardware with the latest 'mach' chips..."



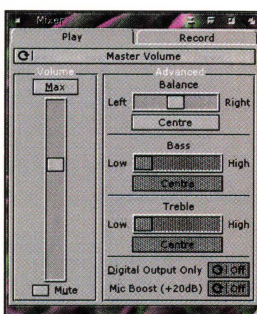
Having a blast

Support for Soundblaster cards comes in two parts. The first is the mixer software (programmed by Richard Brooklyn, author of the Medication tool for controlling all aspects of Mediator use). This mixer allows you to control all of the Soundblaster128 inputs and outputs as well as setting the source to make a recording from using AHlrecord (from Aminet) or a similar audio utility.

The mixer is very intuitive to use, with recording and playback features divided into two separate areas via a simple but effective MUI user interface. It is slightly different to the mixer programs which you may have seen for other Amiga soundcards - instead of all the controls for each of the inputs/outputs being located in the same window, they are separated from one another. Changing between inputs is achieved via a cycle gadget, after which you are free to change the volume and balance settings. Bass and treble adjustment are not supported by the SB128 card and will be ghosted out (the SB LIVE card should allow for these settings to be changed).

The other requirement for using a Soundblaster in your Amiga is the provision of AHL drivers, which allow you to redirect the audio from a large amount of existing Amiga software to the new card to instantly achieve higher quality sound output. Once the drivers have been installed you will need to configure AHL so that you are using the SB128 instead of the normal Paula chipset using the AHIPrefs program which will have been copied to your Prefs directory. The next thing to do is run your pieces of audio software (MP3 player, music editor and so on) and make sure they are all set to use AHL for their audio output, not forgetting to select one of the SB128 modes as previously configured in the AHL prefs program (or in the case of some programs, via the AHL mode requester).

The difference in sound quality over the Amiga's dated Paula chipset is immediately noticeable,



"...watch TV in a window on your Workbench screen."



with more discernable detail, particularly when playing back high quality MP3 files. Furthermore, the developers of respected Amiga audio software ProStationAudio have already added their stamp of approval, saying that the AHL Soundblaster driver for the Mediator passes all their internal tests. We tried out a large amount of AHL software and have encountered only a few problems which were eventually solved by changing to different a different AHL mode. Other users have said that they are having trouble getting DigiBoosterPro to work with the drivers, but we have been unable to confirm or deny such rumours.

What's on the Elbox?

The other newcomer to the field of PCI cards on the Amiga is the humble TV Tuner card, many different models of which - no less than 47 different chipsets, in fact - are now supported thanks to the TV card drivers also present on the Mediator Multimedia CD.

TV cards, of course, allow you to watch TV in a window on your Workbench screen. The software provided here is pretty basic but does the job. There is no fancy GUI or autosearch function for finding the channels broadcast in your area. Instead, the software relies upon some predefined icons which are installed into your Sys: partition.

The TV card drivers consist of three main parts: a tv.library file which is installed into libs:, a preference file (to control the sound on the card) which is installed into ENVARC:Mediator/ and a program called, simply, 'TV' which is copied to your C: directory. During the installation process you are asked about the make of TV card installed in your system, so that only the relevant preference file is copied across.

Sound Support

The current drivers are compatible with Soundblaster128 cards equipped with one of the following chipsets.

ES1371
ES1373
CT5880
EV1938

Unfortunately, the SB128 card lacks the onboard SP/DIF present on the Soundblaster LIVE (later models). Elbox have, however, confirmed that owners of this CD will have the SBLIVE drivers e-mailed to them as and when they become available.

MEDIATOR MULTIMEDIA CD

The main problem with the current TV drivers is the time it takes to set things up. As it stands, you need to go through all of the TV channel icons that Elbox provide (there are 70 of them) until you find one that works for your geographical location. These files are named 'CH**', where ** is a number from 1 to 70. After finding a channel you can receive, you can rename the icon to something more appropriate, like 'BBC1'. Automatic tuning would be so much nicer - let's hope it appears in a future update.

"Automatic tuning would be so much nicer..."

Having said that, there are a couple of third-party GUIs in development for use with these TV card drivers. Richard Brooklyn's Medication will soon have a section for TV cards and Philippe van Caslsteren recently released a TV control program called ChannelED - take a look at the unofficial Mediator support site for the latest files.

The actual displaying of the TV picture uses an overlay window, which means you can resize the image on screen without any slowdown to the Amiga - so, watching TV may take up a lot of your own time, but your CPU is unaffected and free to get on with other tasks. At the moment, you can't run the TV program on its

own screen, and not all of the features Elbox have talked about are supported - TV capture and teletext, for example.

Not just TV

One of the really interesting aspects of using a TV card is the SVHS/Composite input found on some models. By telling the software to take its input from the composite port rather than the standard tuner port, a whole world of possibilities is opened up. You can plug in a DVD player to watch DVD movies on your Workbench - with no

slowdown, of course. Wire up a PC you might be using as a server. Hook up a camcorder, a

games console, a VCR... you get the idea. Even connect the composite output of a vanilla A1200 so you can run AGA games on your RTG Workbench screen alongside your IRC client, e-mailer, web browser or whatever else takes your fancy. Why would you want to do this? Well, for one thing, the image clarity is higher on a monitor than on a cheap, small telly... and you'll soon find yourself doing these things purely because you can. It's just cool.

Better late than never?

Elbox's Soundblaster and TV card drivers work well, although there are plenty of improvements that could be made - especially where TV card support is concerned, where an auto-tuning facility would cut setup times dramatically. The ability to use a SoundBlaster for improved audio quality is great even when not being used to its full potential with the AHI drivers, purely because you can mix various inputs together (Amiga audio, CD-ROM and the audio from a TV card), control all the levels with the provided mixer program and hook up a single Line Out from the Soundblaster to a separate amp/speaker system.

All things considered, this first release of Elbox's Multimedia CD is a good - albeit belated - move

TV Options

Elbox's TV card driver offers the following features, which can be specified on the command line or as tooltypes in the TV program's icon:

FREQ, PLL These two arguments allow you to define the frequency the card tunes to (see separate boxout).

VIDEO_SRC This allows you to select the source of the video input. Some cards have a composite/SVHS socket so that you can connect other equipment up (DVD player, or a spare Amiga, for example - see main review).

AUDIO_MODE 0=tuner, 1=radio, 2=external, 3=internal, 4=mute (you may need to set this to external if you're using the composite port on some cards).

FM = Tunes into FM instead. (e.g. "Sys:c/TV FM PLL=1582 AUDIO_MODE=1" tunes into BBC Radio One in stereo).

CONTRAST = Controls the contrast of the displayed image (accepted range is from 0 - 255. Default is 108).

BRIGHT = As above, but for brightness (range 0-255, default 128).

SAT_U, SAT_V = Allows to control the saturation of the picture (0-255, default 90).

HUE = Controls the hue of the image (0-255, default 128)

SIGNAL_FMT = This selects the various formats that different countries use for their TV signal (eg. PAL, SECAM, NTSC) The default is defined when you install the software and select the 'TV' program for your part of the world.

SIZE = The driver allows for different initial window sizes from 1-8. Setting to 8 gives you a larger window. All the windows can be increased, but not decreased from their initial size. Opening a small window and scaling it up results in more pixellation of the resulting picture.

FULL_FRAME = Full TV screen. Allows you to scale the window to any size without getting the pixellated effect when scaling a small window to full screen (the extent of the pixellation depends on the card you are using).



Above: Visionary, a TV card 'remote control' style GUI developed for the G-Rex PCI busboard. Mediator owners want it too... more details at www.vgr.com/visionary



to supporting multiple PCI cards on the Amiga, and the software can only improve as long as there is a market for it - indeed, some people have already been asking for a TV card GUI that looks as good as the one being developed for the G-Rex TV driver (pictured above). We await further PCI developments with anticipation.

Sam Thomas **A**

TV card drivers

The TV card drivers are made to work with the Brooktree 878 chipset, which is used in plenty of cards currently on the market. For the full list, pop along to www.amiga-mediator.co.uk

Elbox Multimedia CD

SYSTEM: Any Amiga equipped with a Mediator PCI busboard.

SUMMARY: Great drivers that just need a little more polish and a few extra features to be fantastic.



"We installed ImageFX on AmigaOS XL during a private meeting in St.Louis and the speed was amazing. It was like having ImageFX completely native on a fast PowerPC machine!!"

Kermit Woodall, Nova Design



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- Web Browser with SSL, JavaScript, Java, Macromedia Flash-Player, MPEG-Player and RealAudio-Player
- Just in Time compilation makes it possible to emulate a much faster Amiga - up to ten times faster!
- Supports all common printers with parallel-port and USB
- Virtual memory for the whole AmigaOS
- Amithlon boots AmigaOS directly from CD-ROM
- Direct access to Amiga hard drives

For more information, see Amiga press or visit amigaxl.haage-partner.de

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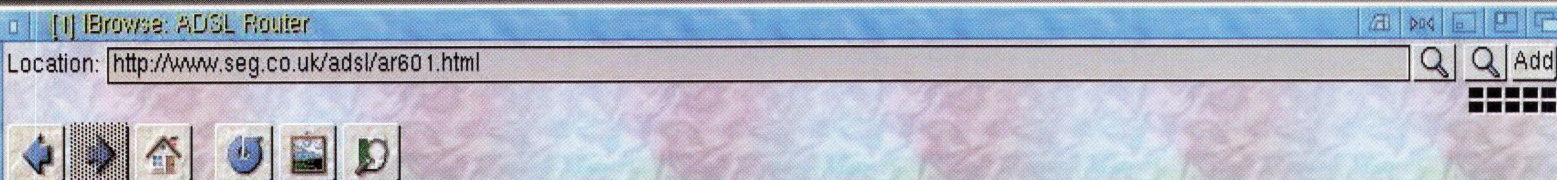


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- **Name** AR-601 ADSL modem/router
- **Price** £179 + VAT
- **Supplier** Seg Communications
- **Contact** Phone 0870 745 8550 or visit www.seg.co.uk



Ooo AR!

Thanks to the AR-601, your Amiga can be always on... the Internet, that is.



Setting up an Amiga to use cable modem is a three stage process.

Plug one end of the ethernet cable into the modem, plug the other end into the Amiga, run MiamiNit. In many countries the same applies to ADSL, but not in the UK. Good old British Telecom have decided that ethernet cards and cables are too complicated for the average PC user, so they have opted for a USB modem. This makes life easy for anyone running Windows, but doesn't help the rest of us.

If you want to use your Amiga with ADSL you have several options. The first is to connect a Windows PC and use some sort of gateway software, like the free but insecure ICS or a more suitable commercial product. A better approach is to get hold of an old PC - a 486 will do the job - and install something like SmoothWall. Each of these approaches requires another computer to connect the Internet, which means extra noise from the drive and fans, not to mention the fact that you'll need more space.

The ideal solution is an ethernet based ADSL modem that replaces the USB offering. BT's terms state that replacing their equipment is a no-no. We've not heard of anyone getting into trouble for using their

own modem, but if you work for BT, please turn the page now.

ADSL in a box

The AR-601 is a combined ADSL modem and router that connects a single computer or a network to the Internet. It looks like a typical dialup modem, although slightly wider and with less LEDs. The box contains the modem, a PSU, two ethernet cables, an ADSL cable, a serial cable, a printed quick start guide and a disk, which contains the full documentation in HTML format. The serial cable isn't normally needed - it lets you communicate with the router using a terminal program, but you can do the same with telnet over the ethernet connection, which is much faster. The serial cable is, however, useful in an emergency - if you lose the password for telnet login, for example.

One of the ethernet cables is for direct connection to an ethernet card, the other is for connecting to a hub. Setup involves connecting the power and ethernet cables, opening a telnet session and setting your ISP login details. Then the ADSL cable can be connected and it will log on in a few seconds.

After that, you can more or less forget about the AR-601, it just sits there and gets on with its job. You can turn your computer off

"...the Internet connection will be there as soon as you reboot."

and on and the Internet connection will be there as soon as you reboot.

The AR-601 uses DHCP (Dynamic Host Configuration Protocol) to allocate IP addresses, DNS servers and suchlike to any computer on the network as soon as it connects. You can disable DHCP and allocate IP addresses statically, which you'll have to do if you want to run any servers.

The AR-601 has two IP addresses, the public one that's connected to the Internet and a private one on your local network. Any attempts to connect to your public IP address from outside only get as far as the modem. It's not a true firewall, but does provide more than enough security for most uses.

Serving servers

If you are running a server and want to allow connections from outside, the AR-601 supports NAT (Network Address Translation). MiamiDx users will be familiar with this feature, which re-routes incoming requests to specific ports on another host on the network. So, FTP requests can be redirected to a second machine

acting as an FTP server and deal with uploads or downloads without affecting other network applications like web browsing.

All configuration is done via telnet, and usually requires the disconnection of the ADSL cable first. This is a bit fiddly, but it is not the sort of thing you have to do very often. All the telnet commands are documented in the HTML help files. You don't even need to type them in, just cut and paste from the browser.

The AR-601 is a reliable piece of hardware, remaining connected for weeks on end, automatically reconnecting on the odd occasion BT decided to drop the connection. Configuration is a little awkward, but rarely needed. The rest of the time you forget the box is there and simply use the Internet transparently.

Neil Bothwick **A**

AR-601 ADSL Modem

SUMMARY: A simple and reliable means of using an ADSL connection.





Ripping CDs

No, not how to tear a CD in half, but how to extract audio tracks for sampling or encoding.

There are several reasons why you would want to rip audio tracks from a CD. You may want to convert them to MP3 format so that you can listen to them on your computer; you may want to extract samples; or you may want to burn some compilation CDs of your favourite tracks. Whichever you do, the first step is always to extract the CDDA (Compact Disc Digital Audio) data from the CD and save it on your hard drive in a format your software requires for the next stage.

Suitable hardware

The first thing you need is a CD-ROM drive that supports digital audio extraction. Most modern drives do, and any drive that is 16x or faster should work. Some older drives also handle CDDA, but many others - particularly older ATAPI drives - do not.

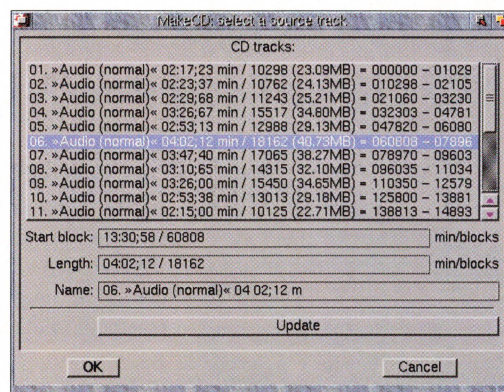
If you are encoding MP3s, the best choice is usually SecondSpin (see this month's Active Shareware on page 38 for more details). While SecondSpin is mainly intended for ripping and MP3 encoding, there is an option to "convert to sample only". Most of the time SecondSpin is the best choice, but it does have problems with some SCSI controllers, notably the cybpc.device. It is also limited to extracting entire tracks, fine for MP3 but a time- and disk-consuming process if you're only after a few seconds of audio.

MakeCD

Although it is intended for writing to CD, MakeCD also does a good job of extracting audio data. There are two ways to rip tracks with MakeCD. The first is to select "Copy CD..." from the Tools menu. Set the Audio File Format gadget to whichever format you require, the Write Mode option to "Track-at-Once" and Temporary Images to "Use image file." Now press "Setup Project". This takes you back to the main window with all tracks listed. Remove any you don't want and press "Create image files." MakeCD will rip each track from the CD and save it in your chosen format. Simple.

The other method is for individual tracks and gives more control. Select "Add" from the main window. This opens the Track Options window, where you set the Type cycle gadget to "Track from CD." Next, click the arrow gadget below this to open a window containing a track listing. Select the track you want to copy. The Start and Length gadgets will be filled in automatically, so change these if you only wish to rip part of a track. The format of the time is mm:ss;bb - minutes, seconds and blocks. A block of CDDA data is 1/75th of a second. Press OK and set the Target gadget in the Track Options

window to "Use image file". The format of the saved file depends on the filename extension. Set this to aiff, aifc, maud, wav or raw. You can add further tracks while this window is still open, just click "Add" in the main window again. Finally, click "Create image files" and your tracks will be ripped to disk.



Above: Selecting an audio track to rip in MakeCD.

"The first thing you need is a CD-ROM drive that supports digital audio extraction."

Shell programs

MakeCD isn't as convenient as SecondSpin for ripping complete tracks, but it does offer a choice of file formats and works with drives and controllers that SecondSpin fails on. If your drive is compatible but you want a file format other than AIFF, you may prefer to use SecondSpin and then convert the file to a different format with AmiSOX.

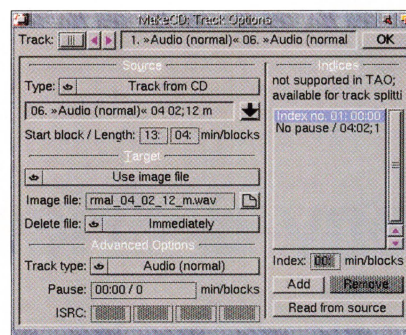
Sox comes with a number of scripts for common conversions, which saves learning the sometimes strange command line arguments. For example:

```
aiff2wav somefile.aiff
```

...will convert somefile.aiff to somefile.wav. If you have a bunch of files to convert, try:

```
spat aiff2wav #?.aiff
```

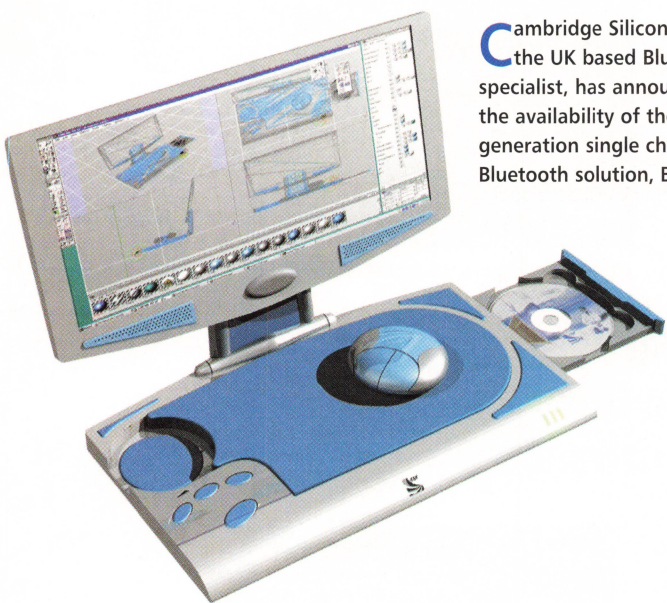
There are also some command line CDDA rippers, like cdda and ReadCDDA. These tend to be harder to use than the GUI programs mentioned. Finally, for the ultimate in ease of use, AsimCDFS can treat audio CD tracks as WAVE files, as though the disc were a data CD, although unfortunately, it can be highly unstable on 060-based Amigas and it is no longer being updated. **A**



newswire

Bluetooth gets Closer

Short range wireless technology's time may be just around the corner.



Cambridge Silicon Radio, the UK based Bluetooth specialist, has announced the availability of their next generation single chip Bluetooth solution, BlueCore 2.

BlueCore 1 is a market leading solution, with over a million units sold so far this year. BlueCore 2 moves onto a 0.18 micrometer CMOS process, drastically cutting die size, as well as improving range and power consumption. The new part should be around 25 percent cheaper than the current version, going down to around the US\$6 per unit mark for million unit shipments.

With Bluetooth struggling to overcome its image as a technology whose time is yet to come, this will be a welcome development in a market where suitable solutions are still hard to come by. However, the

BlueCore 2 marks more than an improved specification for Cambridge Silicon Radio.

BlueCore is a pure digital mixed signal processor rather than using analogue processes, which makes it easier to integrate as an on-chip component. Over the next year Cambridge Silicon Radio plans to reveal further versions of the same technology integrating flash memory, audio decoders and even a complete ARM core - in such formats, CSR hope to make a major impact in the market for upcoming wireless devices, such as the concept model shown here.

www.bluetooth.com

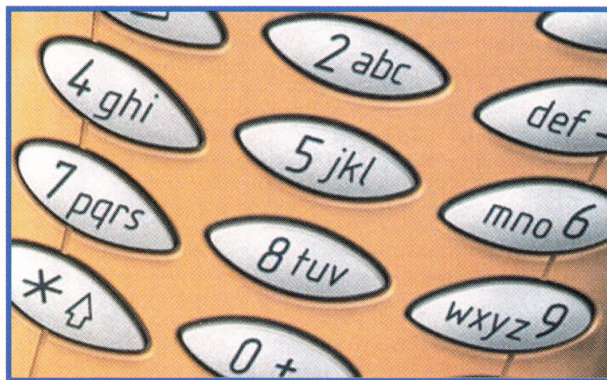
Sony & Ericsson Join Handsets

Sony Corporation of Japan and Sweden's Ericsson have launched their new Sony-Ericsson Joint Venture to produce multimedia mobile handsets. The two companies have merged their handset businesses into one, with the resulting London-based company being equally owned by the two parties.

Handsets produced by the company will bring together Sony's design and Ericsson's technology under a joint branding. Devices will be targeted at the high-functionality sector, with web browsing, game playing and digital assistant capabilities.

They will be competing fiercely with current handset market leaders Nokia, and plan on becoming the world's largest handset provider within five years.

The company starts with a capital of \$500m and a staff of 3,500 based in the UK, Germany, Japan, Sweden and the US. They



are expected to announce their first products in the third quarter of 2002, and the two parent companies will continue their own product lines through to the end of next year. Sony's

Katsumi Ihara will head up the company as President, with Ericsson's Jan Wäreby as Executive Vice President and Head of Sales & Marketing.

www.ericsson.com

Mancunian Translator

Transitive Technologies, a start-up based in Manchester, UK, are promoting a new technology which they term a "Synthetic CPU". This is a code translator program named Dynamite (not to be confused with the online Amiga game of the same name), which allows binaries developed for one CPU to be run on top of another using an in-line binary translator, a process said to be similar to Transmeta's Code Morphing.

The purpose of the dynamic software translator is to provide code-level compatibility on foreign processors, with the first examples said to be able to run x86 and StrongARM code on MIPS architecture processors at

speeds that approach those expected from native performance. Translators for x86 and PowerPC platforms are also supposed to be in the pipeline.

Transitive's offering differs from the Transmeta approach in that it is agnostic of the underlying architecture. It is being promoted as a way of moving away from hardware dependency in legacy applications. In this, Dynamite seems far closer to Tao Group's dynamic translation technology. As with Tao's intent, Dynamite uses a hardware neutral intermediary code, an equivalent of VP-Code. It performs a fast compilation, caching converted code, which it re-optimises as it goes along.

Japanese "e-platform"

Matsushita, Toshiba, Sony and Hitachi have announced the formation of the ePF Network Corporation, a joint endeavour to develop a standardised "e-platform" for interactive and digital television broadcast.

The company will develop a set of standards for Set-Top Box hardware (eSTB) and service specifications, and will promote new businesses and services using STB (Set Top Box) and home gateway technologies. Products are expected to be highly varied, but will meet standard demands, including local storage on hard drives and Internet connectivity.

The new ePF Network Corporation, established on

November 15th, will be owned by Matsushita, Toshiba (25 percent each), Sony, Hitachi (10 percent each) and ten other participating companies, principally Japanese broadcasters (who will each have a 3 percent share of the corporation).

GameCube Rolls Out Quietly

Nintendo's next generation console, the GameCube, was launched in Japan on September 14th, with little of the fanfare that usually accompanies such events. The console is due to be launched in the US on November 18th, with a European launch in 2002.

A reported 300,000 units of the GameCube were sold in Japan in the first three days of release. 700,000 units are expected for the US launch. Microsoft's Xbox, due for release three days before the US launch of the GameCube, is expected to suffer from a significant shortfall in production leading up launch, which Nintendo will be hoping to exploit. With the Nintendo priced at \$199 US, \$100 less than the Xbox or PlayStation 2, competition is expected to be fierce.

Meanwhile, Matsushita, who developed the proprietary DVD format used in the GameCube,



has been demonstrating its combined DVD / GameCube hardware at the Ceatec expo in Japan. Rumour has it this will be around \$100 US more than the standard GameCube.

OCPA Hits 50

New companies join at first official assembly.



On October 5, just three months after it was first announced, the Open Contents Platform Association held its inaugural meeting in Tokyo. Over 50 companies have already signed up to be a part of the OCPA, a body of companies whose aim is to create a standardized content delivery platform based on Tao Group's intent multimedia system, which also forms the basis of the AmigaDE. Newly announced members include such major players as Intel, Pioneer, Samsung, Sybase, Symantec and Seiko Epson.

The association is led by Sharp, JVC, Kyocera and Tao Group, whose Chairman, Francis Charig, was elected to the main committee as Vice Chairman of the OCPA.

"Tao is fully committed to supporting the open approach of the OCPA and we are excited to be able to contribute to its development," he said. "This community is now positioned to be able to deliver improved services and contents to the benefit of consumers, network operators, broadcasters and other service providers, content developers and, most important of all, the consumer."

The meeting took place at the New Takanawa Prince Hotel in Shinagawa, on the day after the establishment of Tao Japan K.K. (see boxout, left). Attendees included representatives from an assortment of companies, including network operators, 2D, 3D and audio companies, top games developers, consumer electronics and semiconductor manufacturers and software engineering firms.

The number of companies officially announced as members of the OCPA is expected to head quickly towards the 100 mark over the coming months, as several blue chip companies whose names cannot be divulged at present, pending the completion of internal paperwork, were also in attendance.

desk alongside a senior Sharp executive and the Presidents of Kyocera and JVC. A slideshow explained the raison d'être of the OCPA - the need to deliver compelling, differentiated content to consumers while enabling manufacturers to have a single content platform across a broad range of client appliances. There was a strong emphasis throughout on the intent software from Tao as the core component that could fulfil all of these objectives.

Sushi was on the menu. With me there, it was obligatory.

"Everything was passed without argument," Francis told Amiga Active on his return to the UK. After all, this was Japan. "After the meeting was closed, the newly appointed OCPA Board immediately convened for twenty minutes prior to a party for all the attendees.

"Sushi was on the menu. With me there, it was obligatory," he added with a smile.

During the party, speeches were made by various executives, including Francis, gave the "campai" (the toast). Plenty of mixing was done as the various companies explored the possibilities of co-operation.

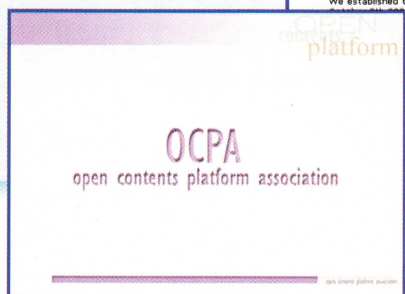
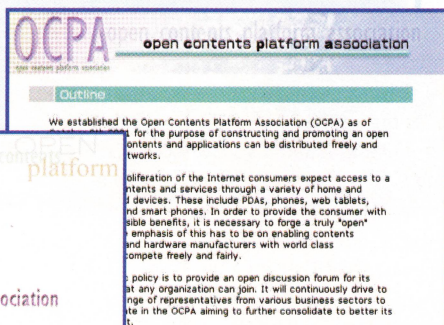
Nothing too defined in terms of technical development was being explored at this first meeting - such matters, we understand, are to be discussed at the first technical meetings to be held in November, when topics such as sophisticated multimedia, streaming, security and peripheral drivers (for things like USB, printers and so on) will be on the agenda.

www.tao-group.com

Tao Japan

Tao Group officially established their Japanese subsidiary, Tao Japan K.K., on October 4, the day before the inaugural OCPA meeting.

Comprising a team of salesmen, engineers and administrators, Tao Japan will serve as the key liaison point between Reading, UK-based Tao Group and the OCPA, whose headquarters are located in Shinjuku, Tokyo. Tao Group's chairman, Francis Charig, tells us he intends to continue to visit Japan around five times a year and has appointed engineering resources from his head office to make sure that there is close contact between the company's engineering groups and the technical parties who will be hard at work defining new API extensions to the intent platform.



Open Contents Partying Association

In all, 150 people gathered to hear the presentations - primarily concerned with the objectives of the OCPA - which were followed by a request to approve the new committees. Francis Charig sat at the front

Just do it

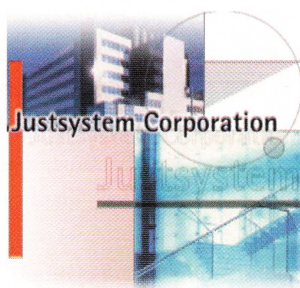
Long standing Japanese software producers, Justsystem Corporation, also had a presence at the OCPA's inaugural meeting. Joshua Arai, the company's Senior Business Strategist, spoke briefly to *Amiga Active* about their role in the Association.

"[Our] roles would be both in technology and marketing of Tao's intent platform in Japan and elsewhere," he told us. "While it is critical, it is also very difficult for players coming from outside Japan to be recognized in the industry [to begin with]."

"Microsoft, IBM, Intel, Oracle, and almost all IT players [from America] were helped by Justsystem to localize their technologies and to meet the requirements of the Japanese market. The same has been true for new players like Tao. Justsystem worked with Tao to localize [the] intent platform for the Japanese market within a very limited time period.

"As a software vendor, Justsystem is providing valuable contents and services for the OCPA platform," Joshua continued, "and hence is committed to leveraging the value of the platform with real market needs and supplemental technologies, in order to make the platform more valuable for device manufacturers, application developers, content holders and end users."

When asked if Justsystem were excited to be a part of the OCPA, Joshua's response was immediate: "Are we excited? Thrilled!"



“



It's an exciting time for Tao and everyone associated with our company. We've just acquired new and valuable intellectual property rights in the Java arena, we've announced new senior executives working alongside myself and co-founder and technology inventor Chris Hinsley - including both a Chief Executive and Chief Technology Officer. Alan Baratz, the CEO of Zaplet Inc. and the man who helped push Java as a well-known brand in his former role as President of Sun Java Software, has joined our Board as a Non- Executive Director.

“...intent technology in cameras, phones, PDAs, televisions and web tablets will be in the stores over the coming months.”

More highly skilled engineers have joined our staff in England. We have formed Tao Japan in Tokyo and have already managed to set in place a highly capable team to execute our policies in the region. There has also been the opening meeting of the Open Contents Platform Association with a better than expected sign-up including so many world-class blue chip technology companies.

On top of all of this, we've got products in various areas about to be announced and launched; so intent technology in cameras, phones, PDAs, televisions and web tablets will be in the stores over the coming months.

The deal flow for our company is actually a lot better than I had expected, even though the market has gone through quite a downturn. Irrespective of the general economic conditions and despite the slowdown in wireless handset sales over the last few months, it's still a dynamic industry. This is especially true in Japan, which is significantly ahead of the rest of the world in the kind of feature-sets found in phones and other mobile appliances. In fact, one of the interesting aspects of working so closely with many of the Japanese consumer electronics companies is that there are more exciting developments taking place right now in terms of digital connected appliances than at any time in the past.

So, while I'm sad to be signing off from working with the team at *Amiga Active*, I believe that the new venture from the same excellent journalists is going to cover the most vibrant technology market place, period. The new magazine, as presented by David Stroud, is being given access to operators and manufacturers in a way that its competition would envy and will surely provide enough original information to keep us all reading the new magazine with the same loyalty that we've all had for *Amiga Active*. Tao will continue to be an avid supporter and I wish the team every luck in this new venture.

Francis Charig.
Chairman, Tao Group.

”

New Faces, New Places
TAO

AMIGA

*Wondering what
Amiga's forthcoming
Digital Environment
actually consists of?
Amiga are breaking
their silence at last.*

DE Revealed

It became well known that Tao Group's intent would provide the foundation for the new AmigaOS within days of the last buyout, but since the beginning of last year we've heard little beyond a handful of names - Ami2D, Ami3D, Sheep and so on. Over the last few months most attention has been paid to AmigaOne and AmigaOS 4.0, but AmigaDE is where the really important developments are taking place. With the first release of the DE and a new SDK (Software Development Kit) due shortly, we're finally beginning to get a good idea of just what Amiga are going to be offering to the world.

What's in a name?

Before we get on to the specifics, it's important to understand the differences between the various products and packages that Amiga are developing. These can be split into two streams - the AmigaOS and AmigaDE - which will eventually converge. AmigaOS 4.0+ builds on the current AmigaOS, while AmigaDE uses Tao Group's intent JTE (Java Technology Edition) as a foundation layer. AmigaOS will use a replacement of the exec kernel which runs (initially) on the PowerPC family of processors, with an emulation layer to run other parts of the OS which are still coded for the old 68k processors. It will likewise run 68k Amiga software as well as PowerPC native software. The AmigaDE, being built on intent, is binary compatible across platforms - that is to say that the same executables will operate on any AmigaDE installation, whether it runs on top of Windows, a cut-down Linux kernel or in a native form for any supported hardware platform.

**...a new version containing many
of the parts developed by Amiga
should be available soon.**_____

Beyond that, further divisions can be made. In the AmigaOS this is simply a matter of tracking progress - version 4.0 will still require access to classic Amiga hardware, but OS4.2 will be entirely independent. As the OS is developed, the APIs (Application Programming Interfaces) will converge with the AmigaDE's APIs, so that eventually, for applications for AmigaDE and AmigaOS, the code will be practically the same. The AmigaDE itself will run on AmigaOS in version 4.2, but developers will be able to compile versions of applications natively to AmigaOS for the enhanced performance that will be offered by the higher end platforms it will be aimed at. By version 5.0, the two should have converged entirely.

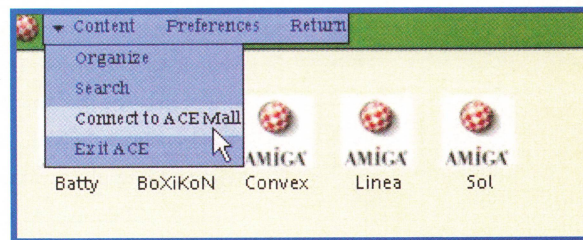
AmigaDE can be divided according to target. It will be available in three basic forms - the SDK, which includes the DE and development tools; the AmigaDE itself, which is the scaleable AmigaDE computing environment; and the DE Player. The current release of the SDK is barely any different from a straight intent SDK, but a new version containing many of the parts developed by Amiga should be available soon. This is the maximum, all-in deal. The DE itself is a "pick and mix" of technologies which can be selected to suit the target application - for example, some OEMs (Original Equipment Manufacturers) may decide their hardware doesn't require all the graphical elements if it doesn't have the display hardware to need it. Finally, the DE Player is a just that: a content player, a closed-box solution for delivering AmigaDE content to a platform.

The user experience

The next releases from the AmigaDE stable will be a new SDK, which includes the full DE environment (as far as it is ready for public consumption) with a set of development tools and a limited run-time environment - the AmigaDE Player. This should be a significant advance on previous releases of the SDK in terms of presenting Amiga-sourced technology. The thing that will really mark the next step in Amiga's progress as a company will be the release of the AmigaDE Player. The player can be compared to traditional content players such as RealPlayer and Microsoft's Windows Media Player (WMP), but unlike these it is a universal content player. RealPlayer, WMP and similar packages are designed to use codec plug-ins to play a limited set of media types, while the



Right: An early version of the AmigaDE Player.



DE player is an executable player - a hosted software environment that allows all sorts of software to run.

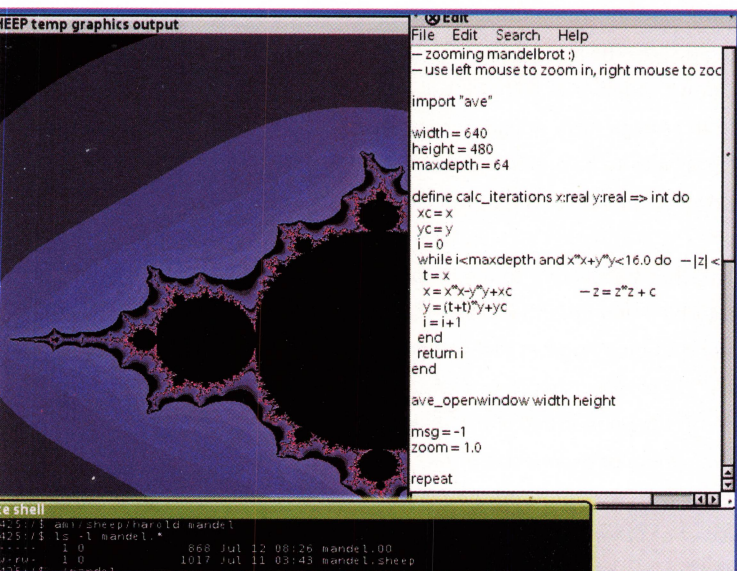
From a user's viewpoint, the AmigaDE Player is a closed system. It presents a simple menu-driven front-end through which one can access software packages located either in the local file space or within the file system of the host computing device. The most important aspect of this as far as content provision goes is that it will also connect directly to the Amiga Mall, Amiga's online store, to allow software packages to be purchased and downloaded directly into the Player. The download format is a standardised distribution archive, in a container format which is transparent to the DE player - the user just downloads it and doesn't have to worry about installation and so on. Amiga's Chief Technology Officer Fleecy Moss told us, *"It is simplicity itself, allowing a user to find content, obtain it, install it and then run it with the absolute minimum of experience. In fact it is best thought of as a virtual console - you see the console, you see the game cart or CD and that is it. Put one into the other and voila!"*

- The "virtual console" metaphor works pretty well - DE software is as transportable as a console game, too. As the DE player is binary compatible across any platform, any software downloaded onto any given DE player can also be run on any other DE player. With the player running, whatever platform it is on - a PDA, a desktop computer, a digital television or whatever - becomes a virtual Amiga console, entirely compatible as far as the software is concerned. Thus the entire package, including game-state data, can be transferred between two systems that without the DE player would be entirely incompatible. Fleecy Moss continues, "You could be playing a game of Solitaire at home, save it, go to be bed, wake up, drive to the airport and then upload that game from your machine onto your iPaq, and carry on playing where you left off."

Into the DE

The AmigaDE itself, as a consumer system rather than as a developer system (the SDK), will probably take a little while longer to arrive. This is built on exactly the same foundations as the AmigaDE Player, but will have a full Workbench to allow the user to operate the DE as a "Virtual Computer", rather than just as a "Virtual Console". Of course, as the AmigaDE is the same software as the Amiga Player, the same "Virtual Console" behaviour is possible on the DE, and AmigaDE will play all content that runs on the player.

...a full Workbench to allow the user to operate the DE as a virtual computer.



Left: The Sheep scripting language in action.

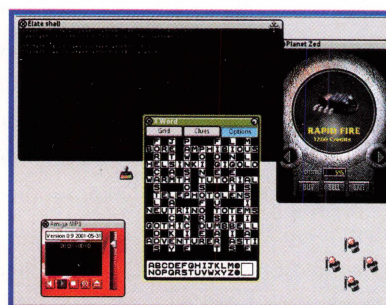
One of the important things about the AmigaDE is that it is a scalable package. Variants of the DE can be produced for OEMs or direct sale to suit a particular platform or environment, including an appropriate selection of the technology modules that Amiga have developed. These modules are the building blocks of the DE, Amiga's value added to the intent package that they hope will make it indispensable to OEMs and developers working with intent.

The set of technologies that the AmigaDE provide covers a significant range. There are a set of multimedia libraries, Ami2D, Ami3D and AmiAudio, the Sheep programming / scripting language (pictured, left), the Bones GUI system and a GUI builder, and some more fundamental architectural technologies. AmigaDE provides a service broker and a component model that provides the basic structure upon which all this is built.

Are you being served?

Underlying this is the Service Broker. This is the key to AmigaDE's scalability, a sort of abstraction layer between

the services demanded by the application and the services provided by the platform. The Service Broker keeps track of just what the AmigaDE is capable of doing, and fields requests from applications for those services, providing the appropriate hooks.





Above: A GUI gadget concept demonstrating the interface flexibility of AmigaDE
Image Copyright Amiga 2001

Brokerage permits a very modular structure to be employed in developing applications, through reusable component models that can be called from any application through the object interface - the ACM, or Amiga Component Model. It also permits another important process; network transparency. A Service Broker can locate services locally or across a network. For example, it would be possible for a software application to ask the Service Broker to search for a service on the Internet.

AmigaDE provides several services aimed at managing and acquiring remote content: the Content Service, the Package Service and the Shipping Service. Presumably these components handle the interface between the DE Player and external content, either in the form of software packages on local storage media such as CD-ROMs, or remotely. This would lead to the possibility that services could be offered remotely to the service broker, so that an application can be truly modular - you could purchase (or rent) individual modules as you need them.

Modelling components

The backbone of this, and the key to the "Amiverse" concept that was much discussed some months back, is Amiga's component architecture, the ACM.

The idea of a component model is that programs can be broken down into a set of functional blocks, and many of these building blocks could be reused. For a long time, programmers have tried to modularise their code, to break it down into chunks that perform specific tasks when passed data to operate on. As well as making it

Ami2D

Given that intent comes with a powerful 2D graphics system anyway, why implement another one? The simple answer is that Amiga haven't. Ami2D sits on top of the intent AVE (Audio Visual Environment) and adds to it. Developer Jonas Gustavsson explains: *"From Tao we have inherited a substantial 2D graphics system as part of the AVE. However, based on feedback from developers and Amiga's own immediate needs, some areas were identified which were felt to be deficient. So, instead of creating a completely new 2D graphics system, we decided to shore up those areas. That means that developers can begin to use the services provided by Ami2D almost immediately."*

Ami2D consists of a set of AVE classes, as follows:

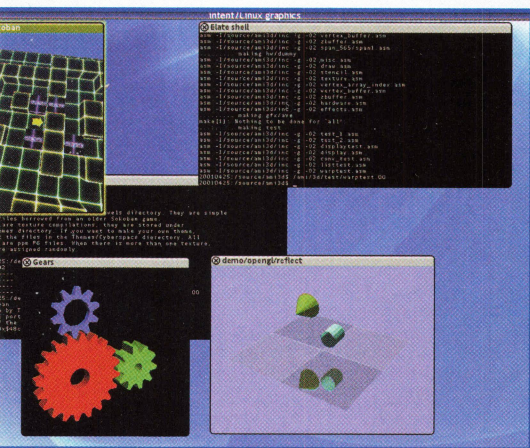
- ▶ **ami/2d/img** - The parent class for image data, this contains the properties most Ami2D classes inherit.
- ▶ **ami/2d/sprite** - A sprite handling class with collision detection.
- ▶ **ami/2d/anim** - An animation class for use in games, media players and so on. Can access all the standard AVE decoders and the **ami/2d/flm** class decoders.
- ▶ **ami/2d/indexed** - A palette indexed pixmap class, creates images from a fixed 8-byte palette and allows free palette definition for palette sharing, colour cycling etc.
- ▶ **ami/2d/scale** - A scaling service for scaling AVOs (AVE graphical Objects) in real time, at high quality, and via a wrapper will also scale any other graphical object without extra memory overheads.
- ▶ **ami/2d/flm** - MPEG and MNG asynchronous codecs.
- ▶ **AmiView** - A multiview style service. This *"...will grow to support all media playback in a datatype way."*

For the AmigaOS version of Ami2D, obviously there is no AVE to build upon. The AmigaOS version will therefore handle considerably more, covering the full set of drawing primitives.

easier to track bugs, this allows developers to copy modules from one program and reuse them, if in a modified form, in another. This led to the idea of creating a common interface for software modules, to allow these modules to exist independently and communicate with each other, so that applications - or at least parts of applications - could be constructed by plugging together pre-existing code objects.

Ami3D

Ami3D is the 3D graphics system for the DE. While Mesa is provided for OpenGL functionality, Ami3D scales better on low-end systems. At the moment the focus is to get it optimised as much as possible for software rendering, so that true 3D applications can be run on hardware that has no support for accelerated 3D graphics. This optimised software engine will be particularly appropriate for small devices such as PDAs, to which it will offer 3D graphics at very useable speeds.



Particularly appropriate for small devices such as PDAs.

Left: Ami3D and Mesa in action.

For higher-end machines, Ami3D will provide highly accelerated 3D graphics. The API is closely bound to the hardware - Glide, the OpenGL variant developed for the 3DFX Voodoo cards is often mentioned for comparison. However, while Glide eventually failed because it was used on the PC - an open platform where people could choose their graphics cards - Amiga are targeting a much more limited range of chipsets.

In the first instance this will be through their partnership with Matrox, and will mean that AmigaDE will run most efficiently on hardware equipped with a Matrox graphics card. Later we can assume we will see other chipsets supported - initially things like the PowerVR MBX for example, a single chip CPU and 3D graphics device for mobile platforms from ARM and Imagination Technologies.

Ami3D will be largely familiar to many Amiga developers, as it is, in essence, Warp3D - although there are some differences created by the different architecture. "For example," Thomas Frieden told us, "Ami3D will use the same state-based approach as Warp3D. The API is basically the same; the differences are introduced for technical reasons... [for example] there are some functions in Warp3D that require a struct BitMap as a parameter. This is of course not available in [the] DE." There will be other Warp3D functions that don't have a parallel in the DE, such as W3D_RequestMode.

There is also a difference in driver architecture between Ami3D and Warp3D, but this will be entirely transparent to software calling the Ami3D API.

The basic structure of a component model is the implementation of the interface. This is normally a descriptor that defines the functions of the object model in a standardised way that can be "queried" by other software components, allowing them to discover what function a component has to offer and employing that function. The Amiga Component Model is slightly different. In this, the descriptor exists as a separate object, providing something that is not unlike, in concept, a Datatypes-style handling of code modules.

Fleecy Moss describes the difference: "For the Amiga Component Model, we have gone a few steps further. Firstly, description and implementation are completely separated. A designer creates a description of the component in a document called a blueprint. This blueprint describes both the component itself and the set of interfaces that it must implement. However, it says nothing about how they must be implemented or even what language should be used.

"A developer then takes that blueprint and creates a set of interface tools, which implement the operational characteristics of the component. As an interface itself is just a description, the same interface can be applied across many different projects, providing consistency and continuity at the abstract level whilst allowing for specialisation in specific implementations at the code level.

"In creating the ACM, Amiga has taken a long look at both the CORBA experiment and Microsoft's moves through OLE, OXC, to COM and COM+. Both have strengths and weaknesses, and we believe that we have extracted the former without inheriting the latter, whilst also adding some Amiga magic."

It's all about multimedia

While working on the infrastructure, Amiga and their partners and contractors have also been working at a number of higher-level technologies. The standard intent package comes with a powerful 2D graphics system called the AVE (Audio Visual Environment), but Amiga have identified areas where they felt more functionality was required, particularly for game development and for the implementation of more complex GUIs. They have also provided two solutions for 3D graphics - Mesa,

Amiga

which is OpenGL compatible, and the lower-level Ami3D. They have developed value-added utilities such as an MP3 player, and have a powerful midi and audio system. The audio system is designed to be highly scalable, and as transparent as possible. For example, it can run a single channel system for a mobile phone, or create environmental 3D sound from multiple speaker setups. They also have a programming language - Sheep, developed by Wouter van Oortmerssen, the author of Amiga E.

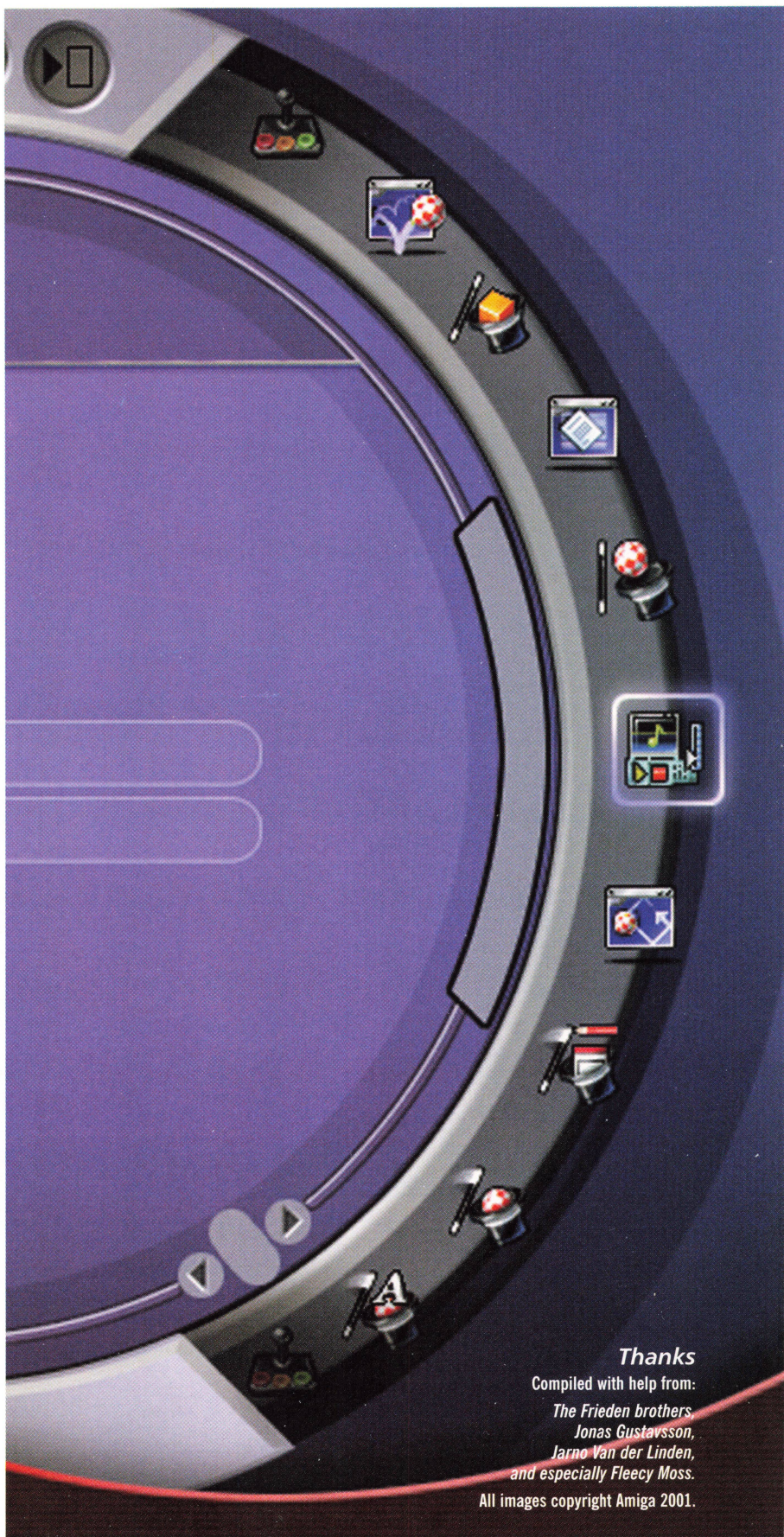
...much of the AmigaDE technology is now in the final stages...

Development is an ongoing process, but much of the Amiga DE technology is now in the final stages before its first public release. The ACM, in the form of version 1.0 of the Amiga Component Management System (ACMS) will appear in the next version of the SDK. This version will allow developers to make use of Amiga Basic Component (ABCs). In later versions it will handle "Amiga Registered Components" - a development of the ABC that gives it a place in the "object sea", turning it into an inhabitant of the Amiverse.

Ami2D is already being used by several trusted developers working on "Series Two" games, and Ami3D will be in the hands of a few developers by the time you read this. Both will appear in the SDK and the Player. Mesa has worked for a while, as has Bones, which will also be in the next SDK and possibly the player. The Audio and MIDI systems are largely ready for beta testing, and version 1.0 of Sheep should also be ready for the SDK - it has been functional for a while, but is still apparently a little "raw". Prism, which allows GUIs to be reformatted to different screen formats without any recoding, will also be in the SDK.

It looks highly unlikely at this stage that Amiga are going to meet their November 1st launch date, but it does seem that - contrary to the impression they sometimes give - they are actually very close to delivering on the things they've promised, and the technologies certainly sound good. Of course, nobody - including us - can really judge until those DE players and SDKs are ready to play with - but hopefully that's going to be pretty soon now.

ersee



Thanks

Compiled with help from:

The Frieden brothers

Jonas Gustavsson

Jarno Van der Linden

and especially Fleecy Moss.

All images copyright Amiga 2001.

Another God Game?

Battle, fame and glory.

According to the introduction to this otherwise simple PDA offering being developed by Pagan Games for the AmigaDE, "...the balance of power has changed. No longer do the Gods face each other in the field of battle. Instead once every ten years, the Gods of Forces face each other in the Challenge in the search of fame and glory."

Now, glory we can understand - but fame? If you're a God, who needs it? Undeterred, we plough on: "Each chooses his or her favorite and guides him through the game of skill and power; the Blobula tournament." Ah yes. Battle, challenge, fame, glory, skill and power - all the entertaining ingredients one craves from portable gaming.

"The winner enters the Hall of Fame and gains eternal fame in the annals of history," continues the Blobula blurb-writer, unaware of his or her increasing repetition in the field of plot description. "The tournament is followed closely by worshippers," (probably because they all have to crowd round a PDA screen?) "and winning the tournament equals winning the respect of the masses - not to mention a considerable amount of" ...what? Fame? Glory? Skill and Power?... "e-currency."

What?

...all the entertaining ingredients one craves from portable gaming.



Blob's your Uncle

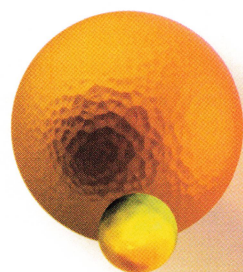
So, you're a God. Fair do's, we can suspend our disbelief for the moment. What do we have to do to accrue these vast quantities of e-currency, then? No doubt we need as much as we can get to spend at the local one-stop on the weekly requirement of sacraments.

On starting up Blobula, we find there are several gameplay options open to us: Arcade, Time Trial and Chill Out. The latter allows you to play the game at your own pace without having to worry about time limits, the number of balls on screen or your maximum glue.

Balls? Glue? Sorry, have we lost you? The game itself turns out to be quite simple. You control a 'ship', which can be small, medium or large in size (selectable after you've chosen a game mode). When played on a PDA, your ship is attracted to your stylus, which you slide across the screen to guide it. Small ships move faster than bigger ones.

The rectangular, portrait oriented screen (although it could be played in either orientation, ignoring the few numerical displays at the bottom) has four differently coloured corners: blue, green, yellow and pink. A number of balls (a random selection of small, medium and large sizes) bounce around, colliding with one another, and your job is to steer your ship into the paths of the balls and send them shooting into their respectively coloured corners, at which point they disappear and you earn points. Clear all the balls within a preordained time limit and you move on to the next level.

It gets more complicated, but only a little. Hitting a ball with your ship (sorry, it's not a ship, it's just a ball like all the others, only it's grey) 'activates' it, lighting it up. To get rid of a ball, it needs to reach the correct corner while in this activated state - but if it hits another two balls, it becomes deactivated again. Ah, you see? Not as easy as it sounds. The more you bump into the balls, the faster they bounce around the screen. To aid in their capture, your ship is charged with a certain amount of glue, which you can deposit on the playfield to slow the balls down. Placed strategically near a pocket, this can be a great help in catching the otherwise troublesome spheres.



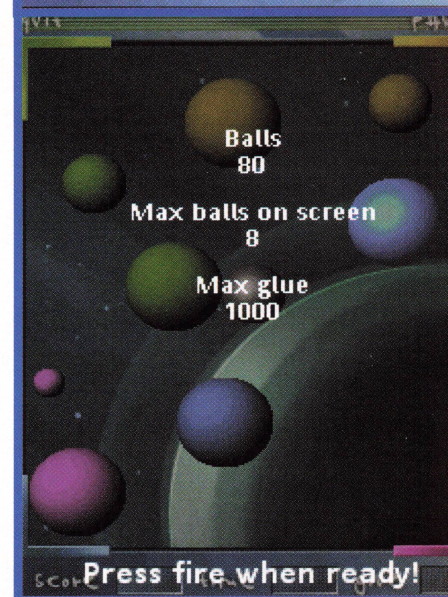
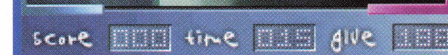
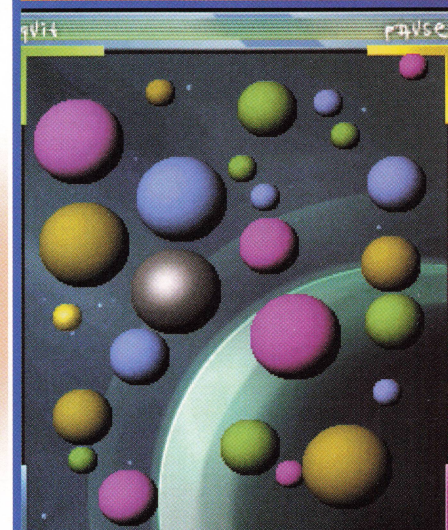
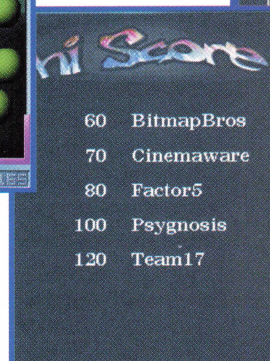
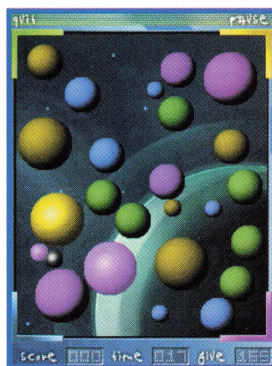
Time waits for no God

The graphics are simple - circles flood-filled with radial gradients, bouncing around over a static background. The glue you deposit is depicted as a simple black circle - which wouldn't be so bad were it not for the fact that a quarter of the background picture is also black.

The gameplay is also simple. Time Trial mode sees you trying to beat the clock to make it onto a high score table, whilst Arcade mode takes you through a sequence of levels with an ever increasing number of balls and an ever decreasing time limit. Every five levels you're treated to a splash of variety thanks to a special 'challenge' level.

Blobula will kill a few minutes on a long (or, come to that, short) journey, but offers little in the way of intrigue. The game dynamic is irritating more than it is addictive, and the crude graphics do little to convey a 'polished' impression. Having said that, we've only seen a late beta, and the final game will have music too, according to Pagan Games.

Blobula is due to be a part of Amiga's forthcoming "Series One" games pack, which we will be taking a look at in full upon its official release.



Prints Charming!

If you need good quality colour printing, see how these four models match up.

Inkjet and bubblejet printers and getting both cheaper and all the time. We look at four such printers here. Two of them are general purpose A4 printers and the other two are from Epson's "Stylus Photo" range, one A4 and one A3. These are intended for printing photographic images, such as digital camera files.

What's the difference?

Colour printing generally uses four colours of ink to generate the full range of tones. The three primary colours of cyan, magenta and yellow can be mixed to print

any colour. However, blacks tend to look brown and "muddy" when printed like this, so a fourth colour, black is added. The two general-purpose printers work like this. Epson's photo printers add two more colours so that less dithering and colour mixing is needed, producing clearer and more accurate prints.

Before deciding on a printer, look at all the costs involved. Printers are sold at incredibly low

prices nowadays, but the running costs can be significant. The manufacturers' own cartridges can be very expensive, and it may invalidate the warranty to use others during the first year. Third party cartridges can cost less, a lot less sometimes, but beware of ones that are too cheap - you get what you pay for.

The type of cartridges used can also affect the costs. All four

printers use separate black cartridges. The Canon also uses individual colour cartridges, so you only replace a one when it is completely empty. The Epsoms use a single cartridge for all the coloured inks, so when just one colour runs out you need a new cartridge. **A**

This printer is designed for printing photographic images, and it makes an excellent job of it. The test image showed rich colours, plenty of detail and virtually no sign of dithering. Blacks were rich and, well, black, while still retaining detail in shadow areas. The styling of the printer is a matter of taste, but I keep mine on a shelf below the desk so I don't have to look at it anyway. The Epson Stylus Photo 790 is reasonably quiet apart from the horrible clunking noises from the paper feed mechanism each time a new sheet is loaded. My old Stylus Photo 700 did this for three years with no ill effect, but the noise is disconcerting nonetheless. With the best quality and the lowest cost of the four printers here, it's hard to find a reason not to recommend this one, but check out the running costs before deciding.

Epson Stylus Photo 790
Street price: £87



Canon S450
Street price: £90

The Canon was the smallest of the four printers, although the paper output tray does stick out of the front some way. It does on all the printers, but the Epson's trays are hinged and can be folded out of the way when not printing.

The 24-bit print quality was very good. Images were not as saturated as with the Epson Photo printers, but colours were true and detail was excellent. Dithering was hardly noticeable, very good for a four-colour printer. The quality was certainly better than the Epson 980, despite printing at half the resolution. Although the other printers offer a 2880 dpi print mode, you would be hard pressed to distinguish between Canon's 1440dpi maximum and 2880dpi prints except in the time taken to print them. The Canon was also the quietest of the A4 printers.





Epson Stylus Photo 980

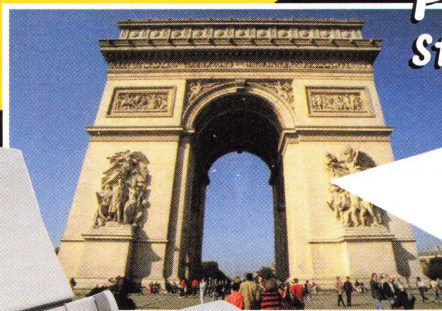
Street price: £156

This printer is more robust than the other A4 models, and the claimed 12 page per minute speed indicates that this printer is designed for a workhorse role. If you want to print several copies of a club newsletter, or do your own mail shots, this may be worth considering. For normal levels of use, the Stylus Photo 790 offers higher quality at a lower cost. The print speed should be taken with a pinch of salt and it doesn't allow for the time taken to build the page and send it to the printer. You may get this speed with a USB connection printing multiple copies of the same page, but not over a standard parallel link.

“...disconcerting nonetheless.”



You wouldn't expect this general-purpose printer to produce the same quality as its Photo brothers with 24 bit images, and you would be right. Colours were not as accurately printed and dithering was noticeable in areas with little detail, such as the blue sky in the test image, but this printer isn't intended for that sort of work.



Epson Stylus Photo 1290

Street price: £304

This is the only A3 printer in the bunch. From the specification and description, I expected a wide version of the 790. In fact, it looks completely different. It is described as a business printer, so there's no iMac-like blue translucent bits, just a subdued cream and grey box. Another concession to office use is the noise level. This was the quietest of the four printers tested, by a long way. The quality was almost, but not quite, as good as the Stylus Photo 790. The smaller printer's output has slightly more saturated colours, but you have to hold the two together to see this. If you need high quality colour printing on A3 paper, this is the one.

TurboPrint

While printing has been improved in OS 3.5 and 3.9, it still doesn't do justice to full 24 bit images. We are also missing drivers for the latest printers, including the four reviewed here. TurboPrint has been recently updated and version 7.20 includes support for many of the newer printers. These include:

Canon BJC 3000, 6000, 6100, 6200, 7100, 8200

with full support for photo cartridge

Canon S 400, 450, 600, 800, 4500

with full support for photo cartridge

Epson Stylus Color 460, 660, 670, 760, 860, 880, 900, 980

Epson Stylus Photo 750, 790, 870, 890, 1200, 1270, 1290

with full photo ink support

HP DeskJet 810, 812, 815, 830, 832, 840, 882, 930, 950, 970, 98x, 99x

TurboPrint not only supports more printers, it gives substantially better printouts. In fact, buying any of these printers without TurboPrint would be a false economy. You would get better results buying a cheaper printer and spending the saving on TurboPrint.

ACTIVE Shareware

This month's Active Shareware gets in a spin about backing up and converting special ASCII characters to HTML entities.

Dunna-dunna dunna-dunna **BackMan!**

My Amiga seems to be rather heavy on hard drives; I've had three fail this year (fortunately, the most expensive one was still under warranty). So it is good that I regularly backup my hard drive. I use the commercial Diavolo, but there are less expensive shareware alternatives, like BackMan.

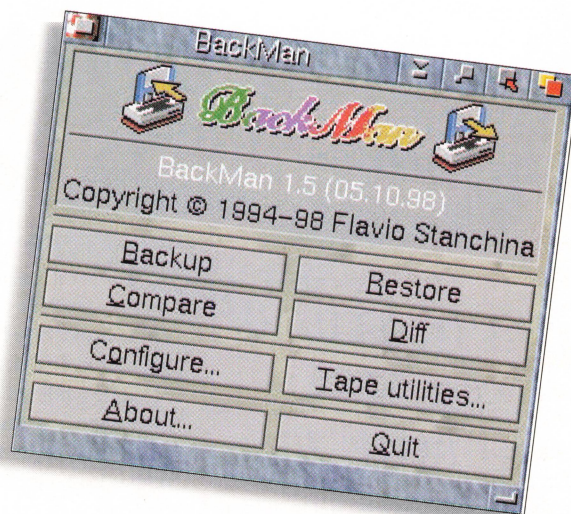
BackMan actually consists of two programs. BackManMUI is the main one. As the name suggests, it uses a MUI interface which could cause problems if your hard drive is wiped and you need to restore from backup, when all your MUI files were only on your backup. For this reason, there is a small CLI BackMan too. The latter is missing many of the features of BackManMUI, but is ideal for copying to a bootable emergency floppy, to restore when things go wrong.

BackManMUI provides plenty of backup options. You can backup to a tape streamer, floppy disks or a file. If you have a CD writer, you could backup to a file and burn that file to CD. This would be quicker and more effective than trying to select and copy individual files for backing up. BackMan uses the XPK libraries to compress files as it backs them up. Don't forget to include whichever compression library you use on the emergency disk or you won't be able to restore compressed archives with BackMan.

A single backup can contain files selected from any number of partitions, and you can select files or directories individually within each partition. The selection can either be done by manually clicking on the files required, or by filtering according to each

file's date or the state of its archive protection bit. There is also an ARexx port, so you can automate the backup process from a script and call that. There are ARexx commands to add directories or partitions to the backup, and to start the backup process, but there is no option to filter files on date or archive bit. This means that automated backups are all or nothing.

Otherwise, BackManMUI works well. It is reliable - which has to be the most important criterion of a backup program - and easy to use. After all, there's no point in having a super-whizzo program that's too much trouble for you to bother actually making backups.

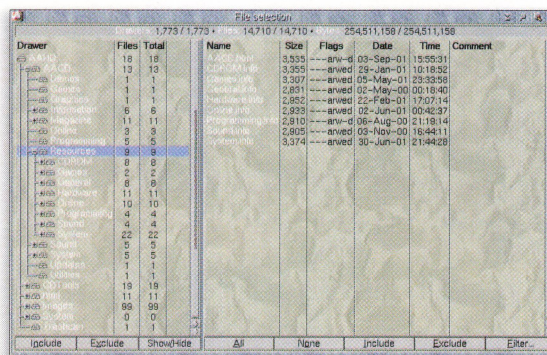


Spin it Again, Sam...

If you have suitable hardware (either a fast CPU or a MAS-Player) for playing MPEG Layer 3 audio files, normally known as MP3, it's a great format for storing music. Leaving aside the legal discussions and the arguments about whether downloadable copies of records harm or help the industry, encoding your own CDs can be handy. The trouble with playing music from CD is that you have to keep changing discs, not to mention the fact that burning your own compilations to CD can be tedious and expensive. By keeping your favourite tracks as MP3 files on your hard drive you have instant access to them all.

All you need is a way to convert your CD tracks to MP3 files. Enter SecondSpin. There are three stages to converting CD tracks to MP3: ripping the digital audio data to AIFF or WAVE files,

"BackManMUI provides plenty of backup options..."



Above: Is it a bird? Is it a pl... oh, sorry, wrong superhero. It's BackMan

"If you want to convert tracks from your CDs to MP3, this is the program to use..."

converting those files to MP3 and renaming them to something more meaningful than track01.mp3, track02.mp3...

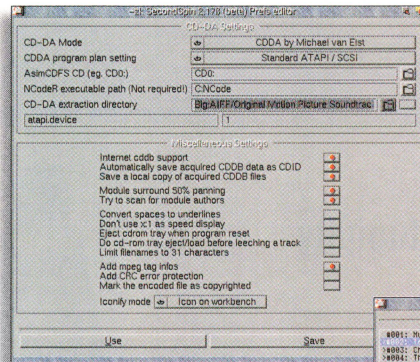
Not only will SecondSpin do all of these tasks for you, it will do them all for a complete CD, or selected tracks on a CD, with no user intervention between selecting the tracks and the end of the process.

When you put a CD in the drive, SecondSpin displays a list of tracks. If you are online at the time, it collects the CDDB information from a server and displays the track names. These are used to name the files it creates. The track titles are cached, so you only need to be online the first time you put each CD in the drive. You can spend five minutes online building up a catalogue of track names on all of your CDs and encode them later when the clock isn't ticking on the phone bill (or your "significant other" isn't drumming their fingers waiting for you to get off the line so they can phone their mother and complain about how

much time you spend on the computer). Then you select the tracks you want to encode, set the various encoding parameters and hit start. SecondSpin rips each track is downloaded as an AIFF file, encodes it and then deletes the AIFF file to save space (these are about 10MB for each minute of audio).

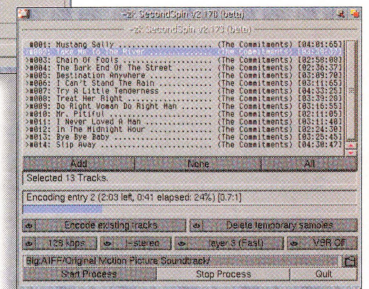
Each CD's tracks are saved into a directory named after the CD, in whatever base directory you configure, although this didn't work quite as expected when we tried it: when you put a second CD in during a session, its name is appended to the previous path instead of the base path. so your first disc's files end up in something like "Work:MP3/Annex_Greatest_Hit/" as expected, but the next disc goes into a subdirectory, like "Work:MP3/Annex_Greatest_Hit/Everybodys_Girlfriend/". This was the only noticeable bug during testing, and is more annoying than absolutely critical.

MP3 encoding isn't a fast process. With a 233MHz



Left: SecondSpin's preferences.

Below: We all have a lot of commitments here at Amiga Active, but Neil's gone one step further...



CyberstormPPC, SecondSpin achieved speed of around 0.8x on the default settings. This means a full 74-minute CD would take a smidgen under an hour to encode, plus the time needed to rip the data from the disc.

The speed varies according to the bit rate and quality you choose - raising either increases the time taken. The speed isn't too important as no user intervention is required during the process. Just select the tracks and let it get on with the job. SecondSpin uses the standard LAME (which stands for LAME Ain't an MPEG Encoder... don't

ask) encoding engine. This is an open source encoder with the Amiga port using the latest version of the code from the *nix world.

If you want to convert tracks from your CDs to MP3, this is the program to use, but don't expect an '030 to convert a CD overnight - you need a lot of CPU cycles.

Neil Bothwick **A**

TxtToHTML

I have some old tutorials on HTML and JavaScript that I wrote a couple of years ago. For ages, I've been meaning to convert them to HTML and publish them on my web site, but never got round to it. I couldn't face going through fifteen text files, adding the various HTML tags to make them readable on a web page, and converting all the occurrences of special characters like "&" to proper HTML-friendly entities like "&".

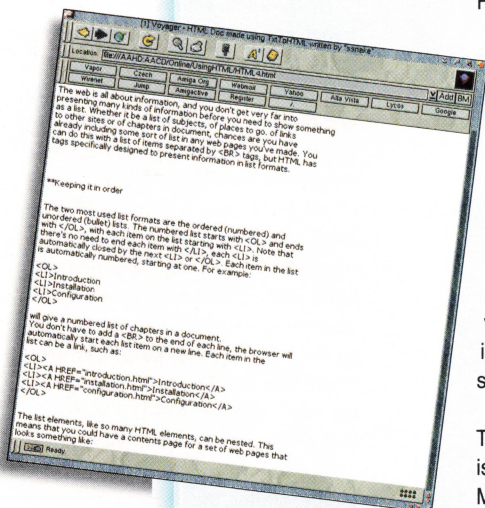
Then I found TxtToHTML. As the tired old cliché goes, it does exactly what it says on the tin. You simply feed it a text file and it spits out an HTML version. After running one of the generated files through an HTML

validating tool, which spewed out many errors, it turned out that TxtToHTML adds an incorrect <!DOCTYPE> header at the start of each file. After changing that to the standard HTML 4.0 Transitional header, every file I tested validated perfectly.

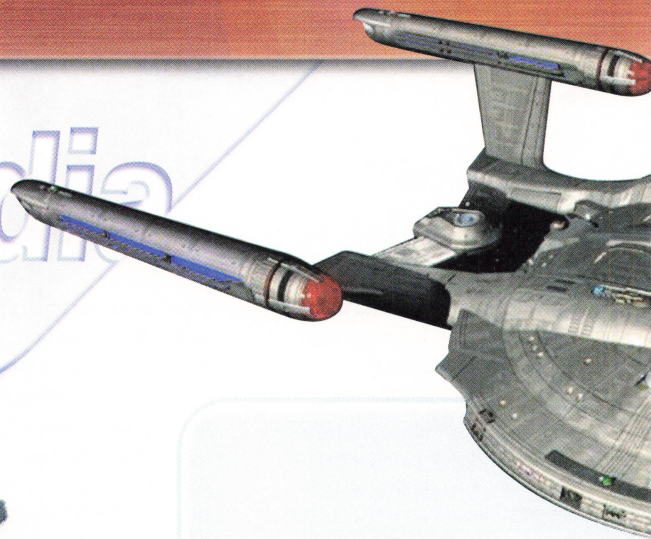
One criticism of this program is that it opens an ASL file requester when you run it. The requester defaults to SYS: rather than the current directory, so selecting each file is less convenient than it could be. Defaulting to the current directory would help. Multi-selection would also be useful. If Txt2HTML accepted the name of the file to convert on the command line, it would be easy to convert files from a DOpus button, or batch convert them from a shell.

Apart from the somewhat inconvenient way of selecting input files, this is a good way of converting existing files for web use.

"As the tired old cliché goes, it does exactly what it says on the tin."



ACTIVE Media



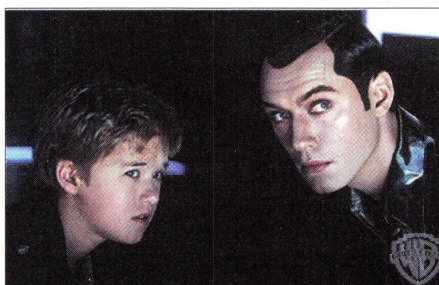
Manufactured stupidity

- Artificial Intelligence (Film)
- Spielberg, Kubrick
- Dreamworks SKG

What is human? There's no easy answer, but the question was asked far better in Ridley Scott's *Bladerunner* - and, indeed, in Mary Shelley's *Frankenstein*.

The proposition behind *AI* is that artificial people are commonplace, but fundamentally very limited. They respond mechanically to the world around them, without feeling and without any true emotional response. In a future world where the polar ice caps have melted, flooding much of the land, birth is strictly limited and there is a demand for child-substitute robots. One company experiments with a new form of robot that has something approaching feeling - a robot boy called Dave (Haley Joel Osmet) who is able to return the love of a parent.

The first half of the movie is set in a future that is no more than a slight twist on the present day. Everything looks like modern day California, except the cars, which look like Dyson vacuum cleaners. This sort of minimal futurism is a currently fashionable way to telegraph a contemporary social message in cinematic Sci-Fi. Following this, it veers into an 80's cyberpunk world of sleazy decrepitude which seems to belong in another movie. Dave, abandoned by his parents, stumbles across various rebel robots and teams up with a "love mecha" called Gigolo Joe (Jude Law). Obsessed with the story *Pinocchio*, Dave goes on a quest to find the blue fairy of that story, in the hope that he can be turned into a real boy and win back the love of his mother.



Above: Dave and Gigolo Joe Courtesy Warner Brothers/Dreamworks SKG



"...except the cars, which look like Dyson vacuum cleaners."

At the end of his journey, Dave finds that the quest is as artificial as he is - it leads him straight back to his creator. Here he both gains and loses his humanity - gains it because he has proven himself capable of wanting and questing - fundamentally human qualities - but loses it because this very success leads him back to his own production line.

Here, in a better world, the movie would have ended. Instead it goes on. And on. And on. The narrative is thrown meaninglessly into the far future, where a *deus ex machina* shaped suspiciously like Spielberg's *Close Encounters* aliens creates a seemingly endless harangue of superfluous additional resolution and utterly vacuous emotional manipulation [*you took the words right out of my mouth -Ed.*]. Given that this is, in effect, the epilogue of the movie, it is a testament to its jaw-dropping badness that at the performance I attended a lot of people got up and walked out. It utterly shredded the reasonably well-crafted suspension of disbelief and threw out any pretence at intelligent philosophy in exchange for saccharine weepy scenes. Frankly, it's hugely embarrassing.

Go and see this movie by all means (it's full of lovely imagery and interesting ideas), but when you see the narrative leaping into the future, pick up your popcorn and run.

AK

Boldly going again

- Enterprise (TV Series)
- Paramount Pictures
- www.startrek.com

Enterprise takes place far in the past of recent *Star Trek* series, even before Kirk donned his corset and flares and took command of the *Enterprise*. It is set 100 years after the Vulcans first turn up and tell us humans just how dumb we are, and humanity is itching to get out of the pram and walk.

In the first episode, captain Jonathan Archer (Scott Bakula) takes command of the new, cutting edge *Enterprise* for the first time, to transfer a wounded Klingon back to the Klingon homeworld and say hello while he's there. On the way they stumble across an evil race called the Suliban (aliens, not Afghanis) and a mysterious trans-temporal plot which will no doubt provide drama for seasons to come.

The problem with recent *Star Trek* franchises is that people aren't boldly going any more. When Jean-Luc Picard and his huge fleet of starship buddies got on someone's back, they would be confident of winning. They weren't so much boldly going where no man had gone before as taking a stroll in the local zoo. *Deep Space Nine* tried to do something different, but ended up wandering vaguely. *Voyager* attempted to go the old root by throwing *Voyager* far away from home, but with *Voyager* presented as the best thing since sliced tribble, there wasn't the same pioneer tension - more like walking through a ghetto than exploring the darkest Amazon.

For the crew of *Enterprise*, everything - from Klingons to their own transporters, which they are



scared to travel in - is new, and everywhere they go is exploration.

The first episode introduces the new core cast, but concentrates on the Captain and the female Vulcan Science Officer, T'Pol (Jolene Blalock). He's a definite Kirk, not scared to punch the aliens and not too keen on rules. She's more than a nod to the very popular Seven of Nine, with bits of Spock built in ["I" -Ed.]. Of the minor characters, an interesting one is engineer "Trip" Tucker, (Connor Trinneer), who seems to share the cynicism of McCoy in the original series. He also shares McCoy's feelings towards Vulcans, although an inter-species shower scene (more accurately a blue goo scene, but that's technology for you) hints that this series may take that Spock/McCoy love/hate thing places the original could never have dreamed of going.



Above: Crew of the 'old' Enterprise Paramount Pictures.

The opening double-episode of Enterprise was simple but well crafted fun, with a whole lot more sheer energy than a franchise this ancient deserves to have. The technology is a nice balance of crude and high-tech - hatches instead of lifts, etc. - and generally looks rather good. With many of the characters still nondescript in the background it's too early to tell how it will all gel together, but it's a surprisingly promising start. **AK**

A tune-up or a full service?

- Website
- www.netmechanic.com

Ensuring that a web site works correctly under all possible circumstances is a time-consuming and ultimately impossible task, but there are things you can do to make it work as well as possible. The important first step is to ensure your HTML is valid by using the validator at <http://validator.w3c.org>. Net Mechanic's HTML Toolbox gives a more detailed report on the state of your site. As well as reporting HTML errors, it checks load times at various typical connect speeds, slow and fast modems, ISDN, T1 etc. It breaks down the causes for the load time into graphics and text, showing the size of each graphic and even has a service to optimise GIF images. HTML Toolbox also checks the links on your site, warning of any that are no longer working and even warns of possible spelling errors in your text.

The full service is not free, but there is an evaluation service that you can subscribe to.

Donations online

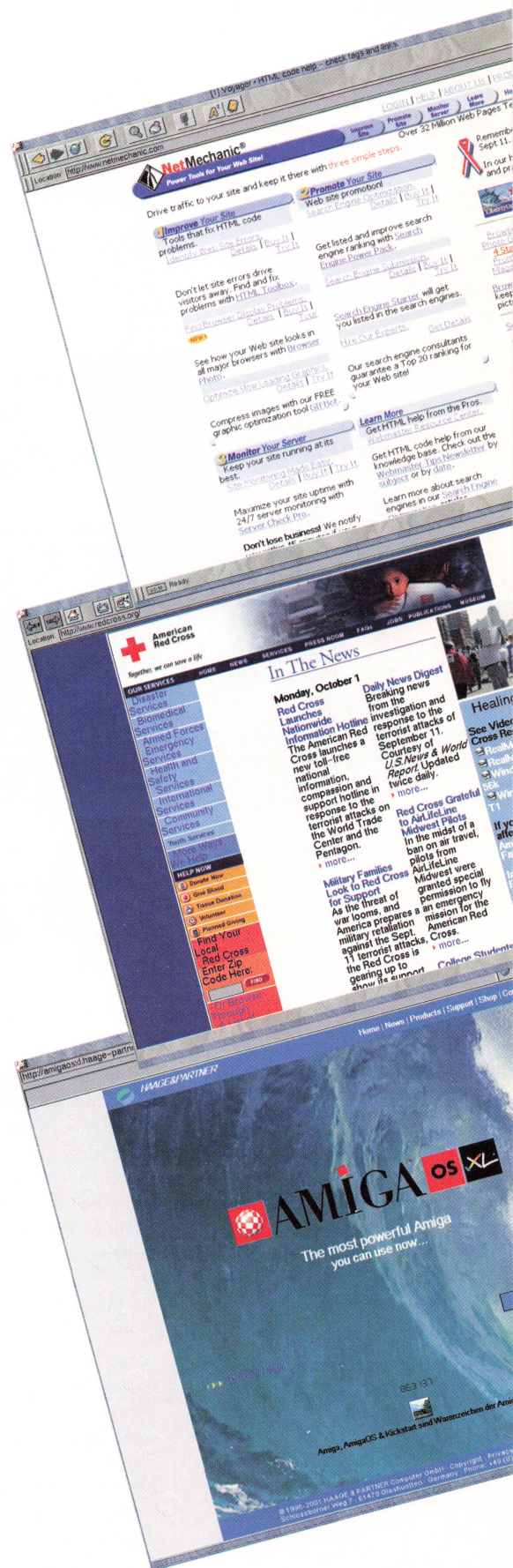
- Website
- www.redcross.org

It's hard to do anything right now without thinking of the terrible events in New York and Washington. The Red Cross are doing all they can to help survivors and families of victims and their web site plays a part in this. Even if you're not involved, you may want to visit this site to see how people are being helped, or even to make a donation toward their efforts. It's shame the mainstream media haven't given more exposure to this - after all, they're quick enough to run negative stories on the Internet.

Amiga x86?

- Website
- <http://amigaosxl.haage-partner.de/index-e.html>

While the future direction of the AmigaOS may be unclear at times, many of us still enjoy using the classic OS but are hampered by ageing hardware. The recent announcements of emulators that run classic Amiga software on modern hardware provide one possible solution. Information is dribbling out at the moment, although there should be much more detail by the time you read this. For the official line on the two emulators, AmigaXL and Amithlon, Haage & Partner have created a separate section on their web site. **NB A**



"Information is dribbling out..."



From friday night
pub entertainment
to museum displays
and information
kiosks... all can be
powered by Amiga.

For some time now, Eyetech have been supplying custom computers to industrial and commercial customers. These are based on the A1200 motherboard, housed in a steel case with a heavy duty power supply. By adding a variety of custom components, Eyetech can produce a computer to order which will do almost anything that might be needed for multimedia, entertainment, training, kiosk or museum applications.

On the case

The whole design of these systems depends on a properly thought out and practical case made from five sheets of strong steel, with a black finish. One sheet is bent to make the base and sides, and three more sheets make up the front, back and top. The A1200 motherboard is mounted on a shelf made from a fifth sheet. Internal brackets can be added for any custom components.

The whole case has almost exactly the same footprint as an A2000, at around two thirds the height. It can be fitted into a strong carrying case, as shown in the photograph (above), but it is sturdy enough on its own to withstand a fair amount of transportation. Without a carrying case, any control knobs which stick out would be at risk.

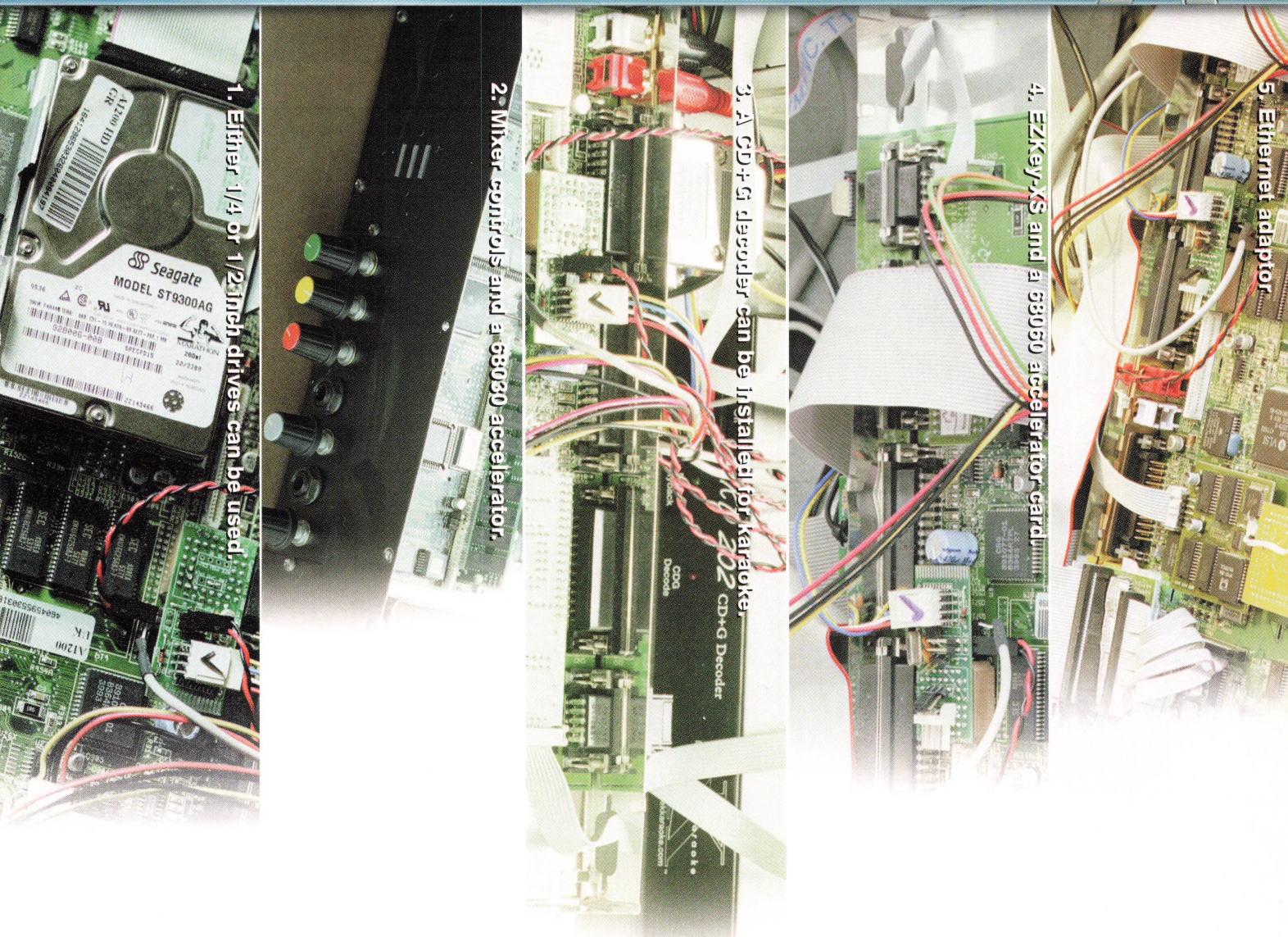
As the panels are simply steel sheet, they can be punched with holes to suit any custom features. The standard back panel comes with holes for three 25-pin D sockets, three 9-pin D sockets (mouse, joystick, monitor), six phono sockets, SCART, two round holes (keyboard, MIDI out), and a reset switch.

Any sockets which are not used in a particular machine are sealed with blanking plates fixed with pop rivets. Pop rivets have been used in several places in this case as they are an effective method of fixing which will not work loose but can be easily removed if necessary. The left side panel, meanwhile, can have a hole cut in it to allow access to the PCMCIA slot which can then be used for an ethernet adaptor.

Applications

While one of these systems would make an interesting home computer, it has no real advantages over a tower case for home use, along with the disadvantage that there is no space for Zorro or PCI cards. Also, home users are beginning to want a faster CPU than the 68060. Where these systems are really useful is in commercial, industrial and entertainment applications.

The Amiga's great strength has always been in its multimedia capabilities. Generally, multimedia doesn't



1. Either 1/4 or 1/2 inch drives can be used.

2. Mixer controls and a 68030 accelerator.

3. A CD+G decoder can be installed for karaoke.

4. EZKey-XS and a 68030 accelerator card.

5. Ethernet adaptor.

need particularly fast processors. What it does need is a robust operating system with good handling of interrupts and well designed multitasking. A particular advantage, compared with other computers, is that the Amiga boots quickly and can be simply switched off when no longer needed, without having to run a shutdown procedure.

The A1200 motherboard also has a good supply of connectors, including composite video out as well as RGB, two mouse/joystick ports, and so on. This makes it ideal for any application that needs to handle a large variety of hardware. Items that could be used with one of these computers include MIDI keyboards and controllers, DVD players, CD drives, custom switch controls (using the joystick port), touch screens, MIDI controlled stage lighting and scenery, audio amplifiers and PA systems, video projectors, any motorized equipment that can be controlled by relays driven from a parallel port, and of course the usual computer gear such as printers, scanners, mice and keyboards... in other words, the Amiga is indeed a versatile piece of kit.

Most users of these computers would not know that the motherboard is from an Amiga, however. The machine would be seen as a multimedia entertainment box, or as the "works" inside an information kiosk.

Amigas in pubs and museums

One very successful application for these systems is pub entertainment. With one of these machines in a carrying case and a small batch of disks, an entertainer can run a session at a different pub every night of the week. This combination also uses an infra-red remote control originally designed for the CDTV, which has a good number of buttons, enough to allow it to even act as a simple keyboard. In the pub or club, the system would be plugged into a big TV or a projector (using the SCART output), and the audio output plugged into the pub's sound system or a PA system.

This particular combination uses an Eyetech boot ROM adaptor which allows it to boot and run from CD without a floppy or hard drive. For other uses, drives can



"A particular advantage, compared with other computers, is that the Amiga boots quickly and can be simply switched off when no longer needed..."

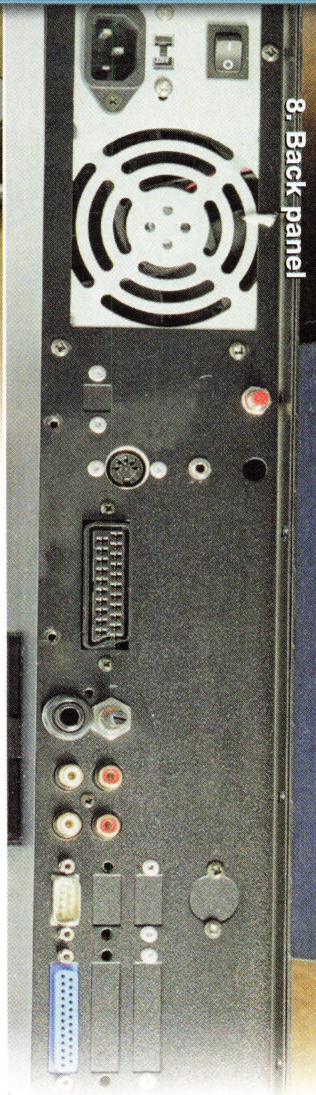
EYETECH RACKMOUNTS



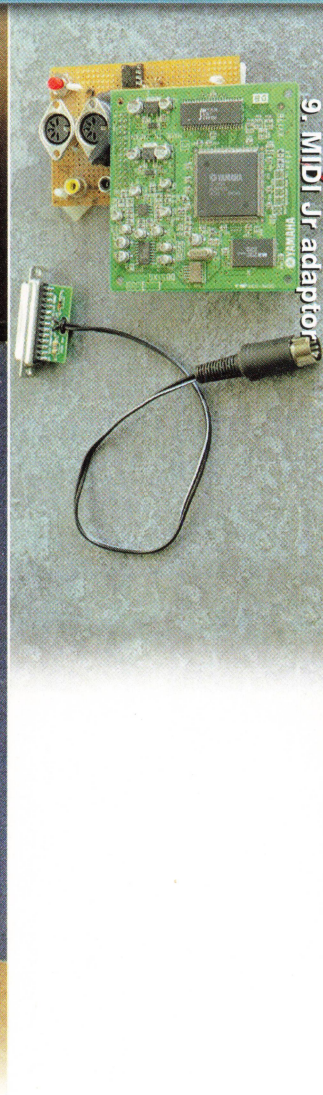
6. The computer can be fitted into a strong carrying case.



7. Rackmount A1200



8. Back panel



9. MIDI Jr adaptor



10. CDTV remote

be fitted if required. It also includes Eyetech's very nice audio mixer board which offers separate level controls for CD audio output (which is pre-mixed with the Paula output), DVD audio, MP3 audio, and two microphone inputs for the entertainment.

Available custom disks include a variety of quizzes and pub games, such as cartoon races (camel, ostrich, horse and granny), morphed faces to recognise, or "Shoot the Bull". It is claimed that there is enough on one disk to last for two years of regular weekly shows. A tune guessing game can use any custom CD that you put together yourself using tracks by well known artists. There are randomised colourful graphics for use when the CD and DVD drives are used for a disco.

As can be seen in the photo (number 3, previous page), a decoder box for CD+G karaoke discs can be fitted. The lyrics appear on the screen as the music plays. VideoCD or DVD karaoke discs can also be used. Another popular option for local pub entertainment is the horse race, which employs video of actual races to give the punters something to bet on. There is also a Kids' Gameshow disk and a bingo game.

A contrasting use for custom computers is in museums, where the most useful inputs will be custom switches or touch screens. Information could be stored on a CD-ROM, but is more likely to be on a server, so the PCMCIA ethernet adaptor will be useful. The Imperial War Museum in London is a heavy user of Amigas and has taken a couple of the Eyetech rack-mount systems.

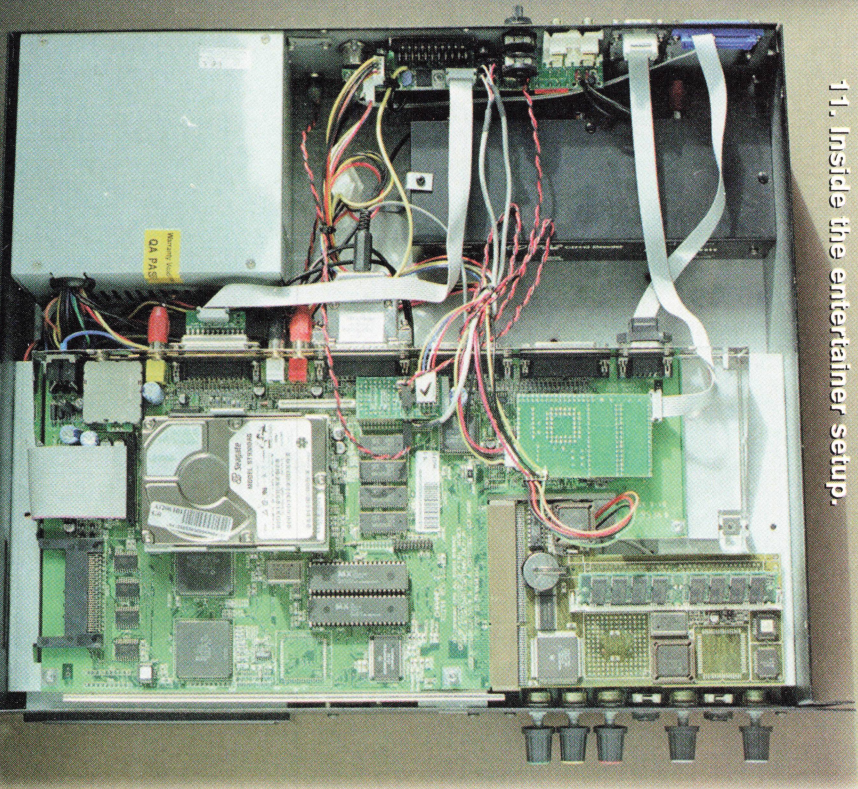
Bits and Pieces

One reason these computers are so useful is that Eyetech have built up a varied range of ingenious small circuit boards which can be used to enhance the A1200, most of which are already available as retail items.

One of the two machines we looked at was fitted with an internal flicker fixer which clamps down firmly over the AGA chips on the motherboard. Although boasting impressive image quality, this flicker fixer, like all others, gives double images on fast moving displays such as Scala wipes. If these are important, it would be better not to use a flicker fixer but rely on the standard Amiga video output. For still displays such as slideshows or for general computer work, this board is a good alternative to a graphics card. The video and VGA outputs are available simultaneously.

The EZKey-XS is 'the little circuit board that could' (or can!). It measures a mere 24x50mm, and carries a

"...camel, ostrich, horse and granny..."



1-1. Inside the entertainer setup.

“The general level of ingenuity and inventiveness shown by all these boards is certainly impressive.”

programmable logic chip and various sockets. Its main function is to allow you to plug either a PC or an Amiga keyboard into an A1200. This will also be the way to connect a keyboard to an AmigaOne with an A1200 motherboard. The type of keyboard is recognised automatically, and the keymapping supports multiple keystrokes (as often used in games) and Amiga shortcuts. The EZKey-XS also has an infra-red detector for use with the CDTV remote, or with other remotes after a flash upgrade, a switch to do a hardware reset of the computer and an ATX power supply switch. The infra-red output gives software control of a DVD player or similar unit. You can also use the remote to switch the composite output between the DVD and the Amiga.

Another useful item is the MIDI Jr, a very simple adaptor plug to fit in the serial port, giving MIDI out only. An entertainment or kiosk machine only needs output as it will not be used for composing. There is also a prototype of an adaptor board to use the Yamaha DB51XG music module which would normally be found sitting on a PC sound card. It gives excellent results and all its functions can be controlled from a tool in Bars and Pipes. The MIDI output from the computer could also be used with Bars and Pipes or Scala to control a MIDI lighting controller. It is not certain whether this adaptor board will go into production.

The MAS-Player hardware MP3 decoder plugs into the parallel port, so that an enormous library of music could be stored on a CD and played back without using up precious 68k CPU cycles. Indeed, for most purposes a 68030 processor is quite sufficient for these computers, although a 68060 can also be fitted in the form of a standard A1200 accelerator unit, which is essential to provide extra RAM.

The last board is a ROM-based board which emulates a Workbench floppy disk with a CD driver, so that a diskless machine can boot straight to CD. The general level of ingenuity and inventiveness shown by all these boards is certainly impressive.

As complete products, Eyetech's rack-mount systems show what Amigas are capable of when used properly - as efficient multimedia computers. Anyone who has a business plan that could use multimedia presentation or infra-red control should consult Eyetech to see if a suitable version of their Amiga systems can be assembled. They will find an inventive company with a realistic approach to technology.

Don Cox 

History of Eyetech

Eyetech are clearly a vigorous and successful company with considerable industrial experience. Their history is an interesting one: the company started out in barcode printing, beginning in 1983 as a subsidiary of a specialist printing company.

After a management buyout, with Alan Redhouse as principal shareholder, the company grew rapidly and became the largest specialist barcode printing service in Europe by 1990. They developed the “peel-out bullet” type of label which is now used by parcel delivery services worldwide.

The barcode printing business was sold to Bemrose in 1990, and the systems integration division to Codeway in 1994. This division had developed systems for integrating barcode tracking into a client company's production and distribution.

After 1994, a consultancy division was expanded (with some large well-known companies as clients), and the Amiga mail order business began in 1996. Industrial control and presentation systems (such as the rackmount computers) have been developed since 1999.

EYETECH

Warp

It's time to get stuck in to some three-dimensional coding!

Last issue, we explained the basics of Warp3D. We can now progress to the really beefy stuff - actually drawing things on our screen. At first we won't do 3D - we'll just draw some Triangles in 2D - but we will progress quickly, as you'll see.

From now on, we'll also be creating a small program which you'll find on your *Amiga Active* CD, and which will progress to a complete small 3D graphics effect over this and the next two issues of this tutorial. Nothing breathtaking, but it will serve the purpose of showing you how easy it is to create 3D scenes with Warp3D - and of course you are invited to continue improving the program, maybe giving it some decent graphics...

Drawing Stuff

Drawing in Warp3D works with so-called "Primitives". A Primitive is a simple 2D- or 3D-Object, where Warp3D specifies the way it should be drawn (for example flat-shaded or texture-mapped). Before we can draw a primitive we have of course to acquire a W3D_Context, as described in the first part of this tutorial.

We'll now go into the primitives in detail. Most of the primitives contain in some way one or more vertices. Each vertex defines a Point in 3D. A triangle has three vertices, for example, while a point only has one vertex. A TriangleFan can have a lot of vertices.

Many primitives also support the naming of a texture. If you do not do texture mapping, the texture pointer should be set to 0. Generally you should set all parameters which you do not need to values which "make sense", even if your hardware does not support the specific parameter. If you do not comply with this, your program might behave strangely on new hardware (for example W3D_DrawPoint supports a pointsize parameter which is not supported by most hardware - set it to 1 anyway, you never know if some hardware might support it).

Before you actually draw things, you need to lock the hardware with W3D_LockHardware(), and after you do your drawing, it is recommended you unlock it again.

"...set all parameters which you do not need to values which make sense..."

The primitives of Warp3D

Name	Data Type	Description
Point	W3D_Point	A single point
Line	W3D_Line	A single line
Triangle	W3D_Triangle	A single triangle
TriFan	W3D_Triangles	A triangle-fan (Triangles with a common point)
TriStrip	W3D_Triangles	A triangle-strip (Triangles with a common line)
LineStrip	W3D_Lines	A connected line
LineLoop	W3D_Lines	A closed sequence of connected lines
TriangleV	W3D_TriangleV	A single triangle with pointers
TriFanV	W3D_TrianglesV	A triangle-fan with pointers
TriStripV	W3D_TrianglesV	A triangle-strip with pointers

Details of the Data Types are available in the include file Warp3D/Warp3D.h.

Factor 3D!

Part Two

A simple example

Example 1 (below) plots a blue point at location 100/200, which is drawn 100 percent opaque (not transparent). You will notice that the RGBA-values are in the range of [0.0-1.0], as outlined in the first installment of this tutorial.

You may wonder why floats (floating point numbers) are used for the drawing position. Why not Integers? The answer, of course, is antialiasing.

Warp3D might "split" a point into several points, using a different brightness for each, for antialiasing reasons. Also, if integer-coordinates are used in a texture mapper, textures tend to "jump" (for example while positions 100.2 and 100.4 are interpreted as "100", 100.5 is suddenly interpreted as "101" - a smoother transition will have a much nicer effect, visually). For this reason, floats are used for coordinates in Warp3D. Of course ultimately they get transformed to Integer screen coordinates, but it might be that the 3D hardware does some antialiasing using the float-information.

Drawing Triangles

Now it starts to get interesting. After all, Corvus himself consists of Triangles...

A W3D_Triangle structure as used in W3D_DrawTriangle contains three vertices instead of the one vertex of a point. It does not matter in which "order" you specify the vertices (some 3D chips want the vertices sorted one way or another, but you do not have to bother with this - Warp3D handles it for you).

If you draw a triangle-fan or a triangle-strip, though, the "order" is important. As seen in the image, a triangle-fan is sorted 0-1-2, 0-2-3, 0-3-4, ..., while a triangle-strip is sorted 0-1-2, 1-2-3, 2-3-4, ...

Example 2 (right) uses a help function InitVertex to initialize the Vertices (location and colour). W3D_DrawTriFan should of course also be called inside the locking of the hardware.

"V"-Drawing-Functions work slightly differently. While the usual drawing functions take Data Types as parameters which have a W3D_Vertex as part of the structure (for example v1-v3 for W3D_Triangle for the W3D_DrawTriangle-Call) the "V"-functions - for example W3D_DrawTriangleV - have advantages if the vertex-data of our engine is already available as an array of vertices, and especially if it is not necessarily available in the order in which we need it.

With the "V"-function, instead of passing the Vertex-data-elements directly, you just pass pointers. So if you have an array of W3D_Vertex you could use just any ordering you want. Vertexarrays, which were introduced in Warp3D V4, are bringing this idea still a bit further, but they will be discussed in a later issue of this tutorial.

Context-States

All Warp3D Functions use the W3D_Context. As we discussed in the first part of the tutorial, the context is a sort of 3D-Rastport. It controls a lot of parameters for 3D drawing. Of course there is a function which can control the different variables of the W3D_Context, which is:

```
ULONG W3D_SetState(W3D_Context
*context, ULONG variable, ULONG value); ▶
```

Example 2: Initializing aTriangle-Fan

```
W3D_Vertex  verts[NUM_VERTS];
W3D_Triangles tris;
int i;

for (i=0;i<NUM_VERTS;i++)
{
    InitVertex(&verts[i]);
}

tris.v=verts;
tris.vertexcount = NUM_VERTS;
// NUM_VERTS>=3 of course

tris.tex = 0;
// flat-shaded for now

W3D_DrawTriFan(context, &tris);
```

Example 1: Drawing points...

/* Assuming that the hardware is already locked at this place */

```
W3D_Point p;
p.v1.x=100.0f;
p.v1.y=200.0f;
p.v1.color.r=0.0;
p.v1.color.g=0.0;
p.v1.color.b=1.0;
p.v1.color.a=0.0;
W3D_DrawPoint(context,&p);
```


**“While Gouraud Shading looks quite nice,
it is not what people really want.
They want texture mapping!”**



For example, with:

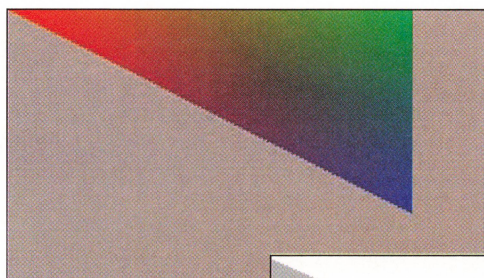
```
W3D_SetState(context,W3D_GOURAUD,W3D_ENABLE);
```

we'd enable gouraud-shading. If we use Gouraud shading, our triangles are no longer flat shaded. Instead the colour values in the vertices will be used to shade the polygons. But that's still not texture mapping. For texture mapping, we need a:

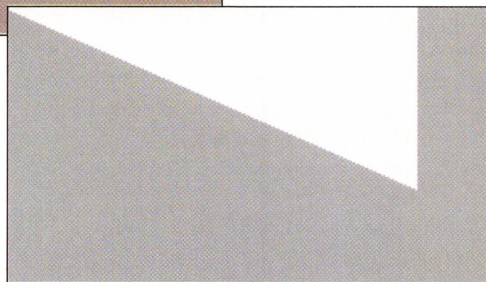
```
W3D_SetState(context,W3D_TEXTUREMAPPING  
W3D_ENABLE);
```

Then, of course, we will need a texture. I will explain how we get a texture next month.

It is usual that during initialization of the 3D-Engine, some calls to W3D_SetState are made to put the 3D-Chip into the correct state. You should be careful that certain things might not be supported by all 3D-Chips.



Left: Gouraud shading looks far nicer than flat shading (**below**).



So do not always ignore the return value of W3D_SetState (of course you can assume that your chip supports Texture-mapping!)

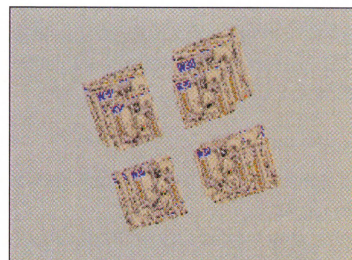
It should be mentioned that there are some states which require another function call to really make sense. For example W3D_BLENDING needs a call to W3D_SetBlendMode to define exactly which blending mode you want to use.

And now for something completely texturemapped

Up to now we have displayed objects flat-shaded and Gouraud-shaded. While Gouraud shading looks quite nice, it is not what people really want. They want texture mapping!

A texture is basically like wallpaper for a 3D object. It gets wrapped around the object to give it a better look. We define our object by using vertices - as we've explained already - and then we wrap textures around it. Additionally to the x/y/z coordinates we now get u/v coordinates. These u/v coordinates specify the position on the texture where a pixel is taken from. Such a pixel is referred to as a "texel". The position x/y/z on the 3D object then gets coloured the same as this pixel. By defining the texture positions of the corners of our polygons we define how the texture will be wrapped around ("mapped onto") the polygon.

Coordinates u/v are numbered in pixel coordinates. Some APIs use a range from 0-1 for texture coordinates. This is not the case for Warp3D. For Warp3D you can directly use the pixel coordinates on the texture (u is the "Texture-x", while v is the "Texture-y"). For example in



Above: Basic texture mapping in action.

Other interesting states of Warp3D

W3D_PERSPECTIVE:

perspective-correct texture-mapping looks much nicer than linear texture-mapping...

W3D_ZBUFFER:

Enable Z-BUFFER (See more details in the upcoming Part 3 of the tutorial)

W3D_ZBUFFERUPDATE:

ZBuffer Update State (see more details in Part 3...)

W3D_BLENDING:

Alpha Blending State (see more details in Part 3...)

W3D_FOGGING:

Fogging State (see more details in Part 3...)

case of a 128x128 texture you have values between (0,0) and (127,127).

Before we can use a texture (by simply initializing the tex-pointer in the primitive to point to our texture) we have to load it. To do this, Warp3D has its own special function:

```
struct W3D_Texture
*W3D_AllocTexObj (W3D_Context
*context, ULONG *error, struct TagItem
*tags);
```

Some tags which can be used:

W3D_ATO_IMAGE points to the image data for the texture. This tag is required.

W3D_ATO_FORMAT: the format of the texture. This is not necessarily like the format of the screen. For example you could use textures using the format W3D_A8R8G8B8 on a screen of format IXFMT_RGB16. I recommend using 16-bit textures though, they are smaller, and current Amiga 3D boards do not have more than 8MB of graphics memory, sometimes less. Do not use W3D_CHUNKY textures, as some newer 3D hardware does not support 8-bit textures anymore. Today's 3D hardware is definitely fast enough for 16-bit anyway. Note that not all formats are supported by all hardware, but some - especially 16-bit formats - are supported in all hardware. Note also that the Virge only likes 15-bit, not 16-bit.

W3D_ATO_WIDTH Width of the texture
W3D_ATO_HEIGHT Height of the texture

Width and height need to be powers of 2 (2, 4, 8, 16, 32, 64, etc). Also 3DFX Chipsets need a width at most 8x bigger than height (or height at most 8x bigger than width). Also, most chips do not allow textures bigger than 256x256 (some chips do, though).

I invite you to check the example program on this month's *Amiga Active* CD and experiment with it, so that you are sure of your coding when the next part of the tutorial comes to lead you deep into the realm of 3D.

Steffen Haeuser **A**

**"Today's 3D hardware
 is definitely fast enough
 for 16-bit anyway..."**



Above: WipEout 2097's ships are polygons, too.

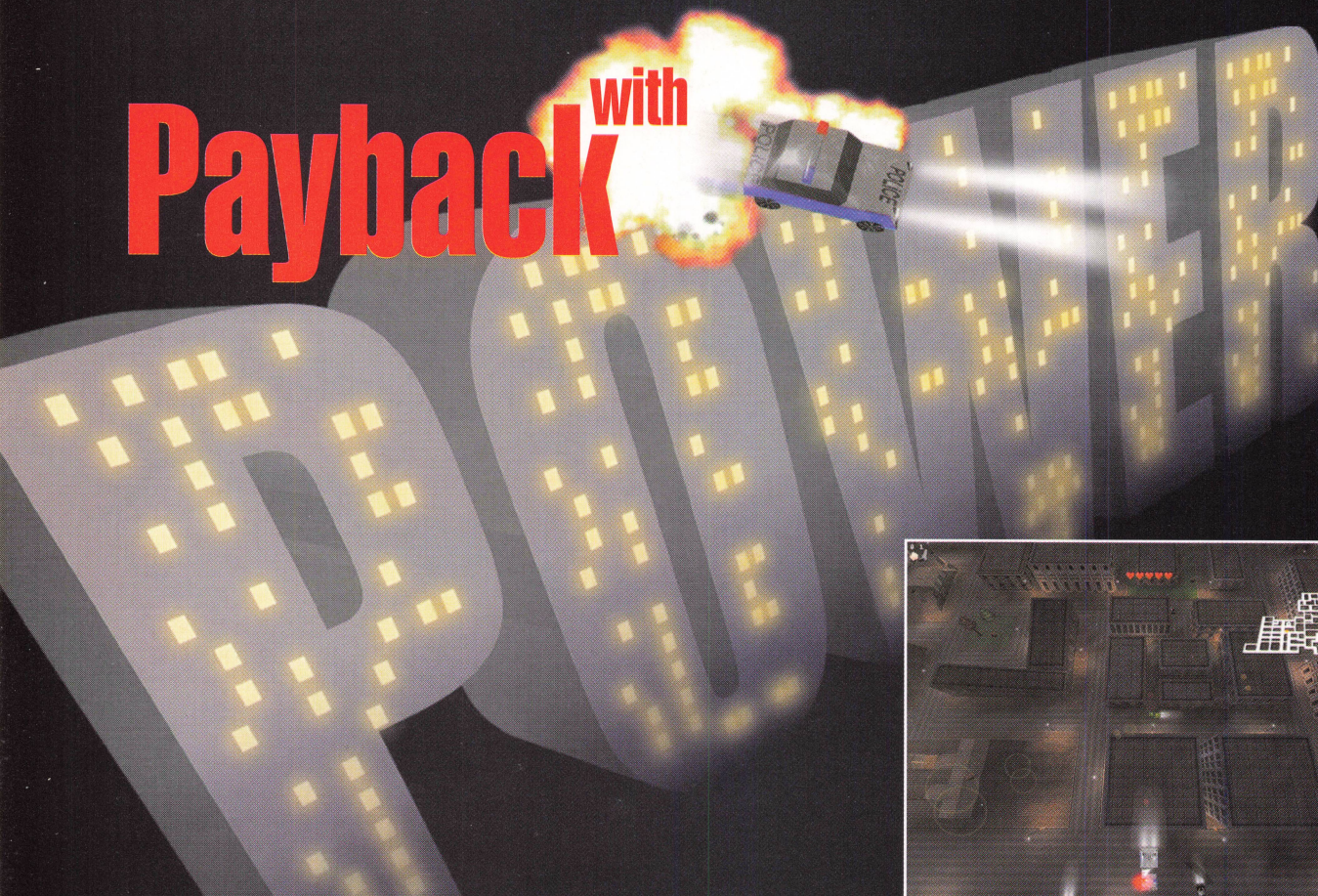
Texture formats

Name	Bytes	Meaning
W3D_CHUNKY	1	Paletted Color
W3D_A1R5G5B5	2	ARRRRRGG GGGBBBBB
W3D_R5G6B5	2	RRRRRGGG GGGBBBBB
W3D_R8G8B8	3	RRRRRRRR GGGGGGGG BBBBBBBB
W3D_A4R4G4B4	2	AAAARRRR GGGBBBBB
W3D_A8R8G8B8	4	AAAAAAAA RRRRRRRR GGGGGGGG BBBBBBBB
W3D_A8	1	AAAAAAAA
W3D_L8	1	LLLLLLLL
W3D_L8A8	2	LLLLLLLL AAAAAAAAAA
W3D_I8	1	IIIIIIII
W3D_R8G8B8A8	4	RRRRRRRR GGGGGGGG BBBBBBBB AAAAAAAAAA



Payback

with



The Amiga's OS is small and efficient, we all know that. So why do we need a really fast CPU, a high-end graphics card and a good wodge of memory? Because otherwise, you wouldn't be able to do this...

When we reviewed the original Payback in AA19, we thought it was pretty good. True, it was rather slow running on anything less than an '060 and on any screen bigger than 320x240, but on a fast 68k CPU it ran smoothly and - when output to a TV to compensate for the required low resolution - looked rather impressive. But it didn't look anything like this. Ladies and gentlemen, feast your eyes on the incredibly addictive, immersively atmospheric and - oh, go on then - gratuitously explosive PaybackPPC.

One of the very few Amiga games - or any kind of software, come to that - to make good use of an installed PowerPC accelerator and 3D graphics card, PaybackPPC has been written on

the Amiga, for the Amiga. For this, we should be grateful. We were given a pre-release beta to run on our A1200T with BlizzardPPC (clocked at 240MHz) and BVision graphics card, and can happily report that the game now laughs in the face of 320x240, guffaws at the mediocre 640x480 and at least manages to chuckle slightly at the thought of 800x600. Push the screen resolution up to 1024x768 and... it's still more playable than it was on an 040/25 at 320x240, proving that the major bottleneck of the original game was the lack of horsepower provided by an aged 68k CPU which had to deal with the ton of maths involved under Payback's bonnet.

Using Warp3D, via either a hardware or software renderer (the latter in lowly 8 bit 256

Unwanted blockage? Forget Toilet Duck...



Above: A few strategically abandoned cars can result in a bit of a pile up, but not for long thanks to my trusty missile launcher.

colours, whilst hardware affords a glorious 15 or 16 bit depth), this significant update to PaybackPPC is now able to offer the not insignificant bonuses of a rotating, three-dimensional display mode and gouraud shading which provides a more atmospheric, realistic rendition of the cities, especially the night-time setting of Los Francos city.

Payback Perspective

The rotating 3D view - made possible by the move from a custom graphics engine to Warp3D - transforms Payback from a simple top-down driving-around-a-city game into a more dynamic, immersive 'adventure'. The camera still tracks you tightly as you navigate the city's streets, zooming in or out depending on how quickly you're moving, but in the new, optional 3D view, the lens spins a full 360 degrees, always facing the way you're facing, and tilts upward to reveal more of the landscape in front of you - again, to varying degrees dependant on your velocity.

The effect this new perspective has on Payback's gameplay isn't merely a visual one. Yes, you get to admire the buildings and alleyways from all angles rather than a fixed 'north is always up' map style viewpoint and consequently can appreciate the height of buildings either side of an alleyway, the span of bridges and, more than anything, the view of a city. Jump in the fastest car you can find, locate a long, straight road and floor it from one side of the map to the other... keeping an eye out for potential obstructions in the form of

meandering lorries and buses, and admire the scenery sliding past on either side of you and rushing toward your car from the distance. You see snow and rain falling all over the city, the traffic lights and pelican crossings blinking colourfully in the distance... you're actually in a city now, rather than navigating a glorified A-Z. It looks beautiful.

There are several other features of note in this update - which will be made available free of charge to owners of the original game, and should be available by the time you read this - including completely configurable controls, screen scaling with the + and - keys, a 'repeat last message' feature (useful for would-be crimelords with worryingly short attention spans) and a little more intelligence in that your man will walk around a car when you try and get in from the wrong side. Not that he breaks a sweat when you're in a hurry, it has to be said.

Granted, in this pre-release beta there are still a few glitches with the 3D (parts of buildings not quite perfectly rendered, trees blinking in and out of existence or disappearing under bits of the surrounding scenery that they should be covering), but these are minor distractions from the rollercoaster ride of the gameplay. As is this text, which is taking up far too much valuable space that could be used for bigger pictures. Sorry.

So, what are you waiting for? Point your web browser to www.apex-designs.net and start having some serious fun...

David Stroud **A**

Gouraud Shading? Whassat?

Simply put, the process of Gouraud Shading (developed by Henri Gouraud some 30 years ago) is a feature often used in 3D graphics hardware to calculate the intensity of light reflecting from a surface based on the angle at which the light hits it. In layman's terms, things closer to a light source are illuminated more than things that are further away. In even simpler terms, it makes a 3D scene look a lot more realistic and natural, and Payback is now a lot more atmospheric as a result.

Chugging slowly down the road with smoke billowing from your engine means you have time to admire the lovely lighting effects.



Payback's rotating, tilting 3D view mode provides a more dynamic view of its cities.



Must Have Memory

Payback will now be offered in four flavours - 68k or PPC, both with or without Warp3D. The memory requirements of each version vary from a minimum of 16MB (68k without Warp3D), through 32MB (PPC without Warp3D) up to 50MB if you're using either processor version with Warp3D. A sensible minimum of 64MB would

appear healthy, and with RAM now selling for bargain-basement prices from all good computer retailers, you've no excuses for not having enough, frankly.



Yes officer, this is my flamethrower.

LETTERS TO THE EDITOR

Address your letters to:

Amiga Active Magazine,

14 Victoria Road,

Bournemouth BH1 4RR

Or e-mail: Interactive@amigactive.com

InterActive

This month's heated debate about the magazine and all things Amiga involves laid back newsagents, "PC Losers", cake, "sick" covers and a naked man in a sauna.



Wherefore art thou, Eyetech?

Dear Editor,

Amiga Active is as usual a top class magazine; I really can't fault it, and look forward to it every month. I also like the new visual layout and "What's on the AACD."

Just one question: why have Eyetech not had an advert for the last few issues? When the new AmigaOne is released, how will they sell it if they don't advertise in the only Amiga magazine?

Ray C Hawkins

Eyetech have told us that they are concentrating on getting the AmigaOne finished and on sale right now, and didn't want to go on advertising until it was ready. I'm sure they will be advertising it just as soon as it is ready, though. We hope so!



"Why wasn't I invited over to help eat the birthday cake?"



I want cake!

Dear Amiga Active,

Why wasn't I invited over to help eat the birthday cake? (I think I'd have preferred a fruitcake to sponge though).

Interesting PDA article. I see pictures of PalmOS type devices showing these things (image processing?) I also like the two articles by Steffen a lot! It's about time we had a decent hardball programming article that really hits with the recent APIs. Hoping to see more Warp3D usage in the following months.

Alan Buxey

Sorry, but we had to eat the cake quick before Bluey noticed it. Yes, you're right, the PDA shots were faked! We ran the Series Zero titles on a desktop machine and pasted screenshots on to the PDAs to give an idea of what they're going to look like.

We're glad you're enjoying Steffen's programming tutorial - we'll be doing some more programming tutorials soon.



Size matters.

Dear AA,

Amiga Active is a great mag, but very small. I'd like to take it with me and read it where I like, but I'd get stick from PC-Losers who boast their PC mags are five times the size at half the price.

Every issue I look at AA's last numbered page, counting those forward of it. Reminds me of the song Food Glorious Food: "Every day we say our prayer, will they change the bill of fare? Still we get the same old 68 pages..."

AA's first issue was smaller than AF's last. AF134 was noticeably smaller than the previous, with the slim spine and no CD jewel case. They said it was because hardware companies wouldn't send their stuff for review. Couldn't they have filled the lost 8 pages with something else? Maybe I don't quite understand here. When AF shrunk it never grew again. Was it too expensive?

They said magazine sizes are largely judged by advertising. Now the Amiga situation is slightly more stable, advertising seems to be better. Merlancia have full page ads in AA with their website containing the only real info. Could some of us richer readers buy ad space in AA and put rubbish in them? No one cares about ads really, except D J Hill in AA24's Interactive, apparently.

Stu MacDonald

Unfortunately, advertising is by no means better. If it had improved, we could have increased our page count, but it has been getting worse. AF could have found

something to fill those 8 pages with, I'm sure - but basically the page count is determined entirely by advertising, and when the advertising revenue drops, so must the page count. The alternative is to find new advertisers, but in a shrinking market those are very hard to find. The alternative is to widen your target market - which is of course just what we are doing (see this month's lead feature for the lowdown). Hopefully, in the not too distant future, you will see our page count increasing, and be happy to take the magazine with you wherever you go.

No, no, no!

Dear Amiga Active,

I didn't like the new look at all (issue 24)! Just when I thought the magazine had everything in the right balance, you guys go and screw it all! Most of the pages looked messy and for the first time I didn't even want to read everything. You should forget the new look and go back to the old one. Okay, to be honest the section about customising your Amiga was great, and I still love you guys!

Arto Suvitie

"Okay, to be honest the section about customising your Amiga was great..."



Yes, yes yes!

Dear AA,

The new look is a big improvement. It feels more professional this way, and the cover is one of the best so far (much better than the green T-Rex and the sick 60-retro covers). Keep up the good work.

Magnus Sjöberg

P.S. Congratulations to the 5-1 victory. Svennis (or Sir Sven-Göran maybe) rules.

How boring the world would be if everyone thought the same! The look will undergo constant revision, but sorry Arto, we're not turning the clock back. The big changes from next issue will include further refinements of our new style - hopefully, Arto, you'll find it looks less messy.



Left: Issue 21's cover "...sick"?



Too laid back?

Dear Amiga Active,

Sorry to bother you, but I buy my issue each month from WH Smith (our local branch is so laid back they don't open till 9.30 a.m., but that is another story!). I went in on Friday and Saturday, but issue 24 was still on sale. According to them Issue 25 'isn't out yet'.

I look forward to the end of each month - I wish all computer magazines were as well produced, nice glossy paper, colourful, and a manageable size. I have to use a PC most of the time, and I get bored with monthly magazines that are the size of telephone directories.

Alan Giles

Amiga Active comes out on the last Thursday of every month. It can take a little longer to arrive around the country, though - and from time to time something goes wrong somewhere between our printers and any individual stockist. If your stockist doesn't get it in on time give them a few days (longer if you are in Northern Ireland). If they still claim they haven't got it from the distributors yet then give us a call on 01202 411110 and we'll do our best to sort it out. Of course, subscribing makes it a lot easier to find!



Careful Ladies, it's The Invisible Man

Dear Amiga Active,

In the next few days I shall be attempting to gain entry into the ladies only session at our local sauna, emboldened by the belief that I am totally invisible, which you have instilled into me over the last year.

"What the hell is he on about?" I hear you say. Just that it seems to be so impossible to get a reply to any e-mail which I send to any department of the mag.

Even my last simple query about why I could not get TVPaint to work, which only wanted a very brief, "You are a prat. It won't work without a graphics card and we forgot to tell you that at the start." was dead in the water when I pressed the 'Send' button.

I do realise that you must have more than a lot to deal with and it is not possible to reply to everyone, but surely a straight question about a prog included on your coverdisc merits some sort of consideration.

Having only now looked at AA25, page 4, I find that you are telling us that Perfect Paint does not require a graphics card while the Readme tells a very different story. Can we please get our facts right or at least explain what the *&%\$ you are talking about please.

Tony Dunn

When we said that Perfect Paint didn't "...require gobs of RAM and a graphics card..." we were perfectly correct - it just needs the graphics card. Ahem, OK, you got us. We messed up. Many apologies.

If you have problems with our coverdisc, you should e-mail the general enquiries address, help@amigactive.com - if they get sent to Guru, Interactive or elsewhere (they often do) they may not get passed on to the right department. If you did send the e-mails to help, then they should have been answered, if only briefly. If we occasionally slip up (and it can happen to us all, let's be honest), we can only say "Sorry!" Have an Amiga Active T-shirt to wear when you visit the sauna.

LETTERS TO THE EDITOR



Can't pay? Won't pay!

Dear AA,

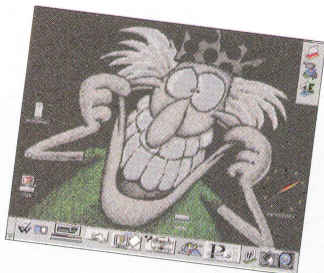
I used to have an A1200, which at one time I wanted in a tower case just like a PC, but I found out it was going to be too expensive. Instead I decided to get a second hand 486 PC from a friend, which I upgraded to an AMD k62/400MHz machine. I then had problems with the motherboard so I got a tower system with a new motherboard and just transferred all my old stuff across to it (well the bloke in the shop did).

Just out of interest, I bought a copy of your magazine to see if prices had dropped after all this time, and lo and behold, they hadn't. No wonder people like me went on to PC's - they are far cheaper in the long run and the Amiga market has priced itself out, which is a shame as I used to love my A1200 for some of the classic games that you can't get on the PC.

Tina Goult

It's true, upgrading your Amiga is an expensive business. Although hardware produced in small runs is always going to be more expensive than mass market hardware, the biggest problem is really not absolute cost so much as bang for the buck - the Amiga's antiquated hardware is just too limiting. However, new products such as the AmigaOne should go a long way to solve this problem by using modern architectures and entirely industry standard parts.

You should take a look at Amiga emulation products such as Amithlon, AmigaXL and Amiga Forever, which might be your ideal answer, as they run on standard PC hardware such as yours. You may be able to run a few of those classic games after all!



In third...

Mike Crossley's Workbench suffers from a low colour depth and not all the icons are of equal quality, but it's not bad for an AGA screen.



Karen, Alex or Brian?

Dear Amiga Active,

I'd like to say a few things about your magazine, but please remember I hold you in high regard throughout.

First of all, I'm afraid I've had to stop buying your magazine! The price is far too high! Isn't it bad enough that we have to pay high prices for hardware, let alone a magazine? The price of £5.95 is much higher than any other magazine, on ANY subject that I have seen, whether it be cars, hi-fi, computing, etc. Perhaps if you were to encourage advertising in your mag, you could lower the price.

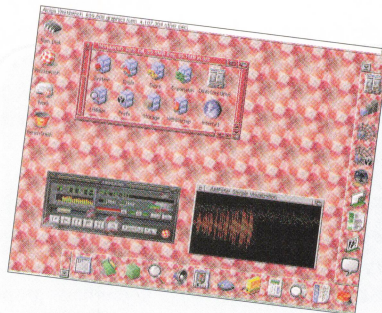
Next, I was rather unhappy about my letter to the Guru. Not only did you call me by my father's name, Brian, where as my name is Alex, but my reply was cut off by your poor alignment.

Despite this I have not lost faith in Amiga. From what I've seen in the news, the WoA southeast show is going to be held near where I live. Also I have an idea for a type of PDA that I hope to be running Amiga DE.

Alex Melhuish

I can see where the Guru's confusion came from, as the FROM: header on your e-mail had the name "Karen Melhuish" on it. I guess he pulled the name from the e-mail header rather than your signature. Sorry Alex!

The cost of the magazine is determined by the amount of advertising (we get all we can) and the presence of a CD. However, we're about to change that balance, and thus also the price. Hopefully you'll find the new format more suited to your tastes and your wallet!



In second...

Robbie Almond's backdrop is a little bright for our tastes, but his screenshot shows that with a little care, you can get a nice colourful Workbench out of AGA.



It's Patently Obvious, isn't it?

Dear AA,

There's a story about the Amiga multimedia patents on the Amiga.org pages at the moment. How about a story on what these patents actually are? There's apparently meant to be 47 of them but I've not been able to find out anything about them at all.

John Davis

The Amiga patents are a mixed bag, and mostly rather uninteresting. Some are original patents, some are for multimedia interface technologies developed for Gateway and assigned to Amiga. Of the old patents, the two that have most often been talked about over the years are one concerning right mouse button menu activation and one concerning mixing multiple multimedia data formats on a single CD-ROM. These two patents deal with technologies that have now become almost universal, which makes them potentially hugely valuable. Finding out whether the patents themselves are widely applicable, however, would involve major legal wrangling. There are a few other patents dealing with chip architectures, but they are even more dubious. You can find out more by searching on the US patent server, which you'll find located at www.uspto.gov.

It has generally been felt that the Amiga patents have more value as bargaining chips than as food for a Rambus-style high value patent infringement suit, but you never know. **A**

...and the Workbench of the month!

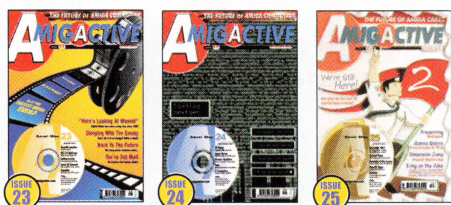
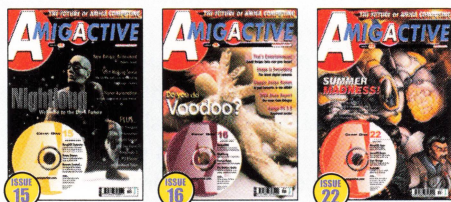


Mark Dale used Photogenics and PPaint to make the gradients that can be seen in this Workbench shot, and utilised Birdie2000 and Visual Prefs to make his windows shine. Nice!

back issues & subscriptions



Get 'em while they're hot!



existing subscribers...

By now, you should know that Amiga Active is changing to digital from next month. The cover price and subscription rates - but not the page count! - are also changing to suit. Because of this, existing subscribers who are due to receive any further magazines after this issue will have their subscriptions extended by up to four issues to compensate, unless you advise us otherwise.

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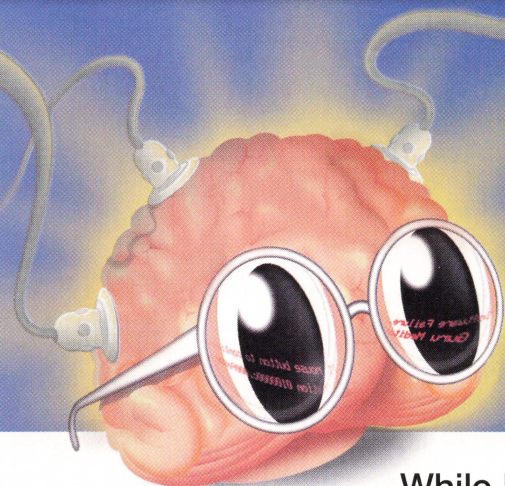
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ASK THE GURU

While he waits for the universal forces of nature to heat his vegetable soup, the Guru answers more of your questions.

CD writing

Dear Guru

I have been trying to get information on what I need to purchase (both hardware and software) in order to allow me to write CDs using my Amiga.



My System consists of: Amiga 1200, 4.3 Gig HD, GVP '030/50 board, Alfa Data PCMCIA Atapi CD Controller, 8x CD-ROM Drive, WB3.0, 6MB RAM (2 Chip, 4 Fast).

I wish to purchase an external CD Writer for my system in order to let me store a lot of data from my HD and also for making compilations of my favorite music tracks onto one CD (as I hate having to constantly swap CD's in order just to hear one favorite track on my rather large CD collection).

So the question is, what hardware and software do I need to buy in order to do this on my set up, or am I unable to do this with my system?

Frank Spiers

First of all you need, naturally, a supported CD Writer. I recommend you download the demo version of the **MakeCD** software, which includes a complete list of supported CD Writers.

The **MakeCD** demo is not very limited and you can really try it out. If you use it, you should of course invest in the full version. There is also a demo version of **BurnIT!**, but this one is more limited. You also get a list of supported CD writers with **BurnIT** - both it and **MakeCD** are nice programs.

I would also recommend updating your system to SCSI, as IDE - especially with a quite low-end CPU - might cause problems when writing CDs at high speeds.

When you get a CD Writer, try and find a model that supports CDRW disks - very useful for backups. Remember to make sure that either **MakeCD** or **BurnIT** supports the device you buy.

Please take note that your system should be fine for track copying, but the CPU is not fast enough for on-the-fly MP3 to CD Audio Track conversion.

I want my 30GB!

Dear Guru,

Thanks for your response to my previous query concerning large hard drives, and PFS3.

Unfortunately, I still need an answer to the main question I had asked. How do I enable my towered A1200, running Workbench 3.9, to format, and make use of a 30GB hard drive?

Mike Crossley



You need to use the **DirectSCSI** version of **PFS3** with the A1200/A4000 IDE port. The **PFS3** manual covers the installation of this and you then use **HDTtoolbox** to set the DOS type for each

partition to **PFS\03**. You also need to ensure that the OS 3.9 patches are made to **scsi.device**. This should happen by default, unless you have **IDEfix** installed. If your startup-sequence contains the line

```
SetPatch SKIPROMUPDATES  
"scsi.device" QUIET
```

change it to:

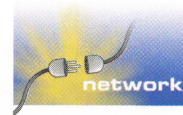
```
SetPatch QUIET
```

If you don't do this, partitions over about 8GB won't be recognised.

Amiga to Imac

Dear Guru,

Please can you advise me on how to network my Amiga 1200 (Eyeteck tower, 060, 32MB RAM)



to a PC and to an iMac using Ethernet. I have got a Hub and Ethernet PCMCIA card from Eyeteck, but how would I actually get access to all the computers on the network and vice versa? For example, I would like to let the PC have access to the 250 Zip drive on my Amiga and I'd like to be able to access the PC's CDRW drive, etc.

At some stage I might get a cheap PC (Base Pentium?) to use as an internet 'hub' so all machines can simply use the old Pentium to get access to the net, which will be set up with a firewall of some sort.

The Amiga is running OS3.5, the iMac is OS 9.1, and the main PC will have Windows 2000. The older Pentium could have maybe Win 95 or 98 but I don't know at the moment as I haven't got that yet!

Martin Day



There are two options for you here, Martin. One is to use ftp clients with a GUI (for example, Directory Opus for Amiga and PC and a tool called WindowsCommander for Windows), which combined with FTP servers would provide the functionality of a directory tool accessing the other machine via ftp as if it were a simple directory structure.

The second, more complex but much more professional option is to use Samba - a program that makes Amiga, Linux, Mac (and other systems') drives appear in the Windows drive list - and vice versa. You can then copy files directly to the "foreign" drives over the network. For the Amiga, go to www.amigasamba.org. For the Mac, may I refer you to a piece of software going by the name of "DAVE" (no relation to our Editor) from a company called Thursby. It was announced in July that Thursby would release a free version of DAVE for Mac OS X (not for OS 9, though). Details can be found at <http://maccentral.macworld.com/news/0107/17.dave.shtml>.

Slow to Spin

Dear Guru,

I have been having problems with my A1200T with 603e/144MHz PPC and 64MB of RAM. Every time I start from a cold boot I have to hit the reset button for my computer to access my hard drive. If I don't, the HD indicator light will go out about the time it is supposed to access my floppy drive for the first time.

I don't even need to give it much time to boot the first time before I reset - five seconds or less will do it. Do you have any ideas why my system could be doing this? I used to have a Cobra 68030 turbo card, which worked fine, but ever since I put the PPC in, it needs to be reset from cold.

Also, why would my system reboot on its own, especially when I am not touching it? A lot of times I will just start up my computer and wait. Without me starting any programs it will still reboot on its own. Please help!

Jeremiah Keller

The boot problem you describe is almost certainly caused by the fact that your hard drive is "too slow" for your controller (when the controller asks for the hard drive, it has not yet spun up). I had this problem once too, so I've had a chance to meditate on this one

"Likely causes are overheating, an over-stressed power supply or a loose connection..."

already. I came to the conclusion that there are too possible fixes. One is that most controllers have a jumper or a setting to delay boot-up (have a look at your PPC card's boot menu). Another method is to add a very slow IDE Drive to the IDE Controller of your A1200, which will spin up before your SCSI Drive.

Occasional reboots are difficult to diagnose. Likely causes are overheating, an over-stressed power supply or a loose connection somewhere. Check everything is firmly plugged in and try another power supply if possible.

String and sticky-back plastic?

Dear Guru,

My CyberstormPPC has serious problems. The PPC simply doesn't work - the card behaves like it's a Cyberstorm MkIII.

However, I discovered that if I insert a piece of rubber under the lower left corner of the card, flexing it upwards considerably, the PPC magically starts to work again. First I suspected it might be the connector to the motherboard that didn't work properly, but it doesn't seem to matter if it's firmly pressed to the bottom or not so I guess this isn't it. Any clues what the problem might be? I have a feeling this solution won't work forever.

Johan Rönnblom

If you're sure it isn't simply stopping a short, the rubber spacer is likely to be fixing a mechanical problem. It may be that some deformation of the connector stops it sitting in place correctly without the additional pressure, so you should look for that.

There are, however, other possibilities. If your card has been put under bending pressure - being removed and replaced frequently, for example - some of the traces on the motherboard may have cracked. Study all the connectors first and then look for minute cracks on the PCB traces with a magnifying glass - you may find a cause if you are lucky. Otherwise, an Amiga dealer able to carry out repairs may be able to help.

The Guru



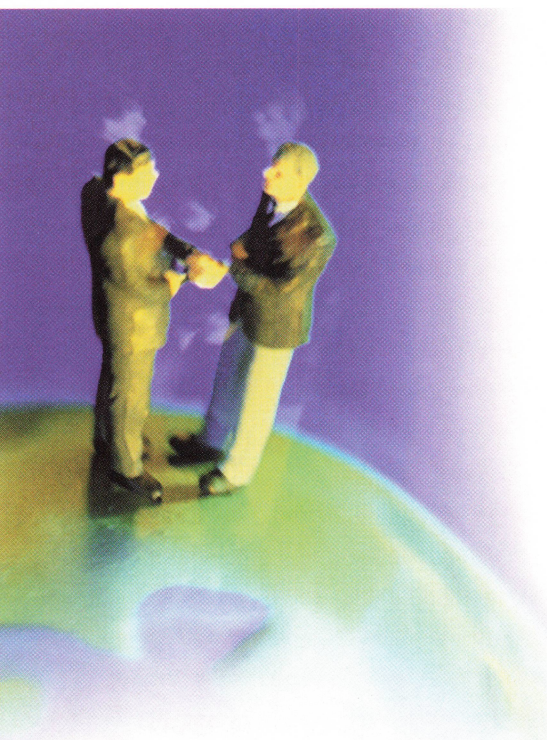
FEELING BLUE? "DON'T," SAYS THE GURU!

Despite the imminent transformation of *Amiga Active* into digital, the Guru's infinite wisdom won't be going to waste. Continuing to meditate from the mountain plateau he calls home, he has agreed (after some brief contractual wranglings of an ethereal nature) to meditate on any queries of a broader technical nature - functionality of the AmigaDE and so on - should you care to transcribe them onto paper or into an e-mail and address them for his attention.

The Guru would also like to draw your attention to this month's lead feature, where the ramifications of *Amiga Active*'s evolution will be explained in more detail. Meanwhile, you may still contact the Guru via the following, slightly revised, address:

The Guru,
c/o digital magazine,
Systems House,
14 Victoria Road,
Bournemouth,
BH1 4RR.

Command Conquer



If your mail or web server refuses to respond to your commands, use telnet to communicate directly.

You don't normally communicate directly with Internet servers. When you want to view a web page, you type the URL into your browser, which takes care of sending a correctly formatted request to the server and receiving the page sent in response. When you want to read your mail, you click the appropriate button in your mail program and it connects to the mail server, logs into your mailbox, collects the mail and deletes it from the server.

There may be times, however, when you want to talk direct with the server. One example that crops up from time to time is when your mail program has trouble collecting a particular piece of mail from your mailbox - usually a badly formatted mail with headers that break the rules, as is often the case with spam. Sometimes you can get rid of this by using a different mail program, one more tolerant to faulty mails, or a web mail service if your ISP provides one, but often it is easiest to connect to your mailbox directly to delete the offending mail.

What's in my mailbox?

The first thing you need is a telnet program. AmiTCP/Genesis users get a basic command line telnet program that runs in a shell. While basic, it is quick and easy to use, and is the one I prefer for simple tasks like removing unwanted mail. Miami Deluxe users have MiamiTelnet. If you don't have either of these, or you want to try something else, AmTelnet is a good choice.

To connect to a server you need two pieces of information, the address and the port number. Servers listen on a number of ports with a different one handling each service. To download mail you connect to the POP3 port, 110. Sending mail is done via SMTP on port 25. This way one server can

handle a number of tasks. Another common example is a web server that listens on port 80 for web page requests and on port 21 for FTP connections from people uploading pages to their web space.

To remove a mail from your mailbox, you connect to port 110 of your ISP's mail server. Once connected, you send the standard POP3 commands as used by your mail program. Since this server normally only expects to be connected to be a program that knows what it's doing, don't expect helpful prompts in response to your commands. The POP3 protocol only has a limited number of simple commands. We are showing them in upper case for clarity, but some servers are case-sensitive and only accept lower case commands. The first two you need are to log you into your mailbox. Type the following:

```
USER yourlogin␣
Pass yourpassword␣
```

pressing return after each line, as indicated by the ␣ character. Each line should get the response "+OK", possibly followed by some informative text. This may or may not include the number of mails in the mailbox. If it doesn't, you can get this information with "STAT". Then type "LIST" to get a list of your mails, which only shows the number and size of each mail. Now you need to identify which mail is causing the problem.

```

DUMB-ECHO      ECHO      RECV:8 SEND:8 I-FLW      VT100 xmodem
+OK Qpopper (version 4.0.3) at latte.stratum.org starting. <10846.100140
atte.stratum.org>
user myname
+OK Password required for myname
pass yougottabejoking
+OK myname has 9 visible messages (0 hidden) in 11622 octets.
stat
+OK 9 11622
list
+OK 9 visible messages (11622 octets)
1 774
2 774
3 774
4 774
5 774
6 774
7 774
8 2026
9 4178
dele 4
+OK Message 4 has been deleted.
stat
+OK 8 10848
quit

```

Above: Using MiamiTelnet to remove a troublesome mail.

"There may be times when you want to talk direct with the server."

RETR n

will fetch the n'th message. However, you probably don't want to read the whole mail, only enough to see if this is the one causing the problem, so type

TOP n 5

to see the headers and first five lines of the body of message n. Once you have found the culprit, remove it with

DELE n**Don't forget to say goodbye**

When you have found and deleted all problem messages, you must type "QUIT" to make your commands take effect. If you disconnect from the mail server without sending "QUIT" the mails deleted with DELE will stay on the server. There is a good reason for this. A mail program normally downloads each mail with RETR, saves it to a buffer and sends a DELE to remove it from the server. If your computer crashed while collecting mail, DELETED mails could be lost. So the server doesn't actually delete them until the mail program logs out cleanly. This is the reason you'll sometimes get duplicate messages if you crash while downloading mail, because they were saved but not deleted the first time. A few duplicates is, however, preferable to losing potentially important mail.

If you are using AmTelnet and your mail server isn't responding, check the "Settings/Emulation Tweaking" menu. You probably need to tick the "Return as CR+LF" item to send those pesky return characters in a format the server understands.

Web servers too

Telnet is by no means limited to mail servers. Provided you know the port number and the commands used by the protocol, you can telnet into many servers. Here's an example of telnetting into a web server.

```
telnet www.amigactive.com 80
GET / HTTP/1.0
Host: www.amigactive.com
```

This connects to port 80, the normal port for web pages.. The next line is the actual command, it means "GET the default page (/) using version 1.0 of the HTTP protocol". You could replace "/" with any page, graphic

```
AmTELNET: connected with nomanian (80.301.334)
IV /etc/groffed.conf Row 91 Col 1 11:03 Ctrl-K:1 for help
<Anonymous /home/ftp/amigactive/readers>
User      aacd
Group     ftp
MaxClients 5
DisplayLogin welcome.msg
# Allow file uploads only
<Limit ALL>
  DenyAll
</Limit>
<Limit STOR>
  AllowAll
</Limit>
</Anonymous>
#::: Advert uploads
<Anonymous /home/ftp/amigactive/adverts>
MaxClients 5
DisplayLogin welcome.msg
User      adverts
Group     ftp
AnonRequirePassword on
UserAlias prof.tpd adverts
AuthUsingAlias on
# Allow file uploads only
<Limit ALL>
```

Above: Using AmTelnet to edit a configuration file on a different computer, via a secure SSH connection.

or file from the site. The Host: line is needed by many web servers. It's common for a single server to handle many sites, all of which resolve to the same IP address. The Host: header tells it which site you want. You send one command, such as "GET", followed by any number of headers, like "Host:", then a blank line to tell the server you have finished. It then sends you the HTTP headers of the page, followed by a blank line and then the page itself. This isn't too useful, unless you are trying to write a text based web browser in AmigaDOS, but replace "GET" with "HEAD" and you'll only get the HTTP headers of the page, like this:

```
Server: Zeus/3.3
Date: Mon, 24 Sep 2001
21:51:22 GMT
Connection: close
Content-Length: 2017
Content-Type: text/html
Last-Modified: Thu, 07 Jun
2001 16:17:37 GMT
```

As well as connecting to a server on a specific port, you can also telnet to a computer without giving a port number. This connects you to the default telnet port, 23, and effectively gives you a shell on the remote machine. Your ISP won't want to do this with their mail server, so you'll get a "connection refused" response. However, telnet can be useful if you have a local network and run a telnet daemon on each computer. This way, you can control one computer from a shell on another. For example, an FTP server running on an old Linux-based PC with no monitor or keyboard can be configured by using MiamiTelnet on the Amiga to connect to it.

Neil Bothwick **A**

SSH

Telnet is useful, but it is insecure. All communication is sent as plain text, including passwords. This makes it susceptible to network "sniffing". There's not much you can do about this when connecting to your mail server - passwords are normally sent as plain text anyway with POP3 - but if you have remote access to a machine, telnet is normally not allowed.

SSH, or Secure SHell, is a means of connecting securely. It uses SSL (Secure Socket Layer), the system used for secure web browsing which basically sets up an encrypted "tunnel" between the two computers. What you type is encrypted by your telnet program and decrypted by the receiving computer. Anyone snooping on the link would see only gibberish.

To use SSH you need a suitable telnet program. Miami Deluxe users already have MiamiTelnet, and will need MiamiSSL installed too (on AACD26 if you don't already have it). Everyone else can use AmTelnet (NetConnect 3). With either program, you will probably want to create a phonebook entry (AmTelnet) or profile (MiamiTelnet) for sites you regularly connect to.

Note that MiamiTelnet's profiles list is stored as plain text, including any passwords. So, if others have access to your Amiga, it is best to not keep passwords stored in the config files.

"Telnet can be useful if you have a local network and run a telnet daemon on each computer..."



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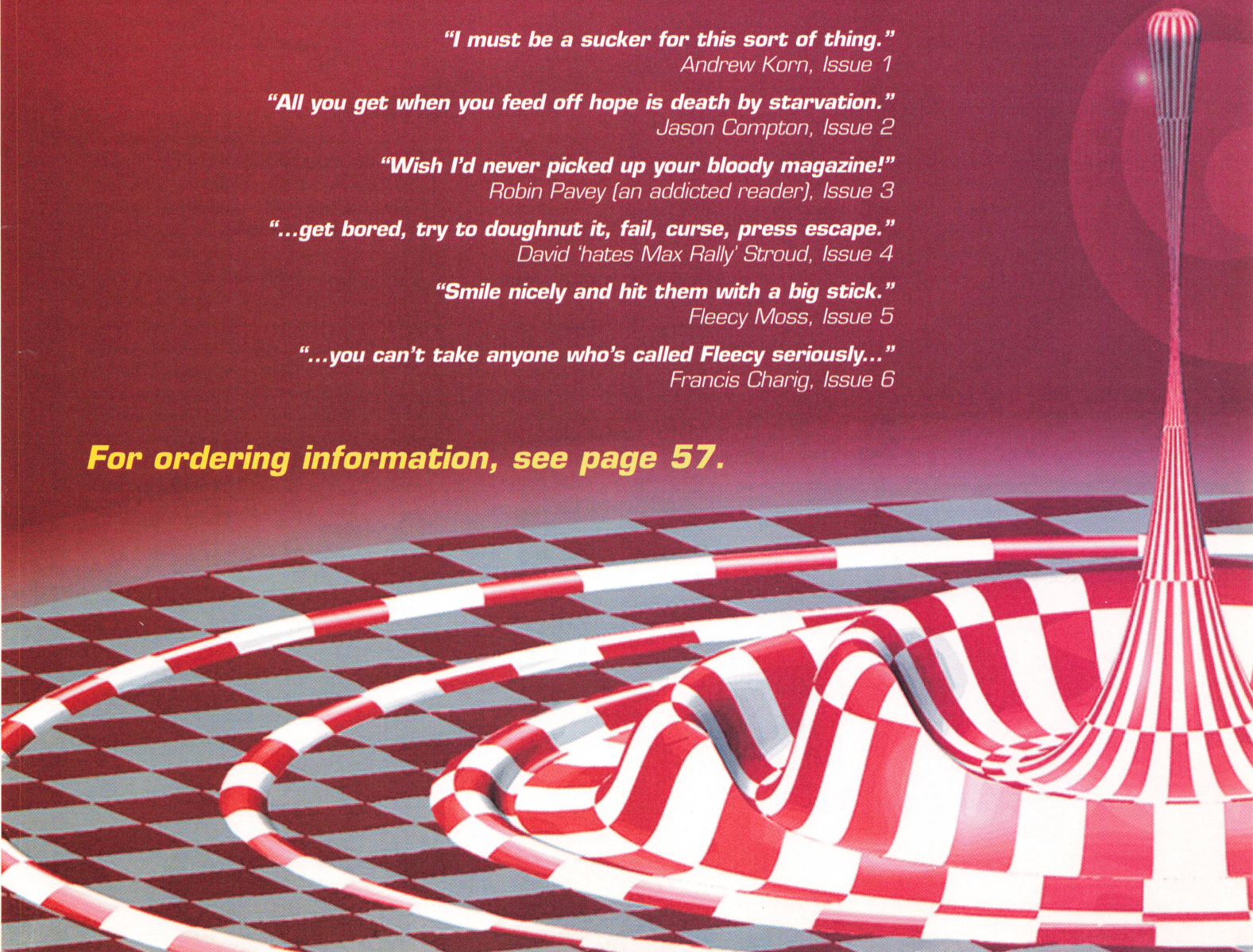
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Francis Charig, Issue 6

For ordering information, see page 57.



Playing God

Lost Toys founder and ex-Bullfrog employee Glen Corpes reveals his part in defining a whole gaming genre.

God may have created the real world in just under a week, but Glen Corpes created his world in a third of the time using a fractal generator and a mouse. The result, you could say, turned out to be quite 'popular'...

Amiga Active: How did you get involved in the games industry?

Glen Corpes: After I was made redundant from the world's most tedious coding job at a company that made Telex machines, a guy called Kevin Donkin who used to pose around in an Amiga T-shirt in the local game shop (in the days before EB and Game) mentioned that the company he worked for was branching out into games. I bugged him into getting me an interview and after an hour or so of talking to Peter Molyneux it became apparent that they had no programming jobs, but the subject of graphics came up. I claimed I could draw a bit, he sat me down in front of Deluxe Paint and a few hours later I had a job as an artist.

AA: Which games did you work on during your time at Bullfrog?

GC: Bullfrog's first game was a port of the C64/Spectrum/CPC game 'Druid II Enlightenment' and my job was to convert the maps, graphic blocks and sprites to the Amiga. After Druid II and our second game, Fusion (both of which did particularly badly), I was

fairly sure that I couldn't cut it as an artist because the market was changing. On 8 bit machines the limitations were so important and the resolutions so low that programmers themselves could often get better results than the few artists working in the industry. The Amiga changed all of that: it had such awesome graphical power and, just as importantly, Deluxe Paint.

Because of this I brought my Atari ST into the office, ostensibly to port Fusion, and intended to practice programming until I lost my job. It turned out that the ST was nowhere near powerful enough to do a straight port of Fusion, so I got distracted into playing about with a set of isometric blocks, inspired by the graphics of the 8 bit classic Spindizzy.

"...and a few hours later I had a job as an artist."

I became fascinated by the way the blocks fitted together while daunted by the task of writing an editor, so I wrote a rudimentary fractal generator which moved a point around a map, raising it as it went: interesting stuff, but it didn't look like a landscape, so I put the 'raise up' tool on the mouse to see if I could hand-craft anything more useful for a game. I had the basics working in two days flat - it felt nice to play with but I had no idea what it could be used for. Luckily, Peter also enjoyed playing with it and was inspired to create the gameplay [of Populous] that everyone remembers.

AA: Is there anything in particular you are happy to have achieved in the games you helped create?

GC: I loved the way that Populous happened, the technical and gameplay sides coming together from nowhere. On a technical level I was quite

proud of the Powermonger graphic engine - it was my first stab at 3D, had some nice features (like the complex dither patterns) and was even quite fast until Peter put the game in!

AA: What's your take on the way the games industry has developed over the last 15 years? Have all the changes been for the better?

GC: I'd say about 90 percent of the changes have been for the worse. It's now very hard to sell ideas to publishers who place huge faith in forecasts from marketing slime who are happiest if the game is "just like x, only with a bigger licence." I suppose programming practices and art quality have improved massively but they have had to as projects have become more complex.

AA: How much do you know about the Amiga today?

GC: Not very much, although I did buy RJ Mical a drink at ECTS. He was wearing the same Amiga T-shirt that Kevin used to pose around in 14 years ago.

AA: Now you've founded Lost Toys, might you be tempted into developing for AmigaDE/intent?

GC: I'd love to see a market for 'alternative computer games' but at the end of the day, it's more important that the games are alternative than the OS. Lost Toys is firmly focused on producing original games for the most popular platforms. If there was a viable market for non-Windows computer games, I'd love to support it. Unfortunately, I've not seen any evidence that there is.

Who's Next?

If you'd like to know what happened to someone from the Amiga's past, we'd still like you to write to us! Although the name of the magazine is changing and we're broadening our horizons, we'll still be tracking people down and grilling them about their past, present and future. The address to write in to is, as always, on page 54...



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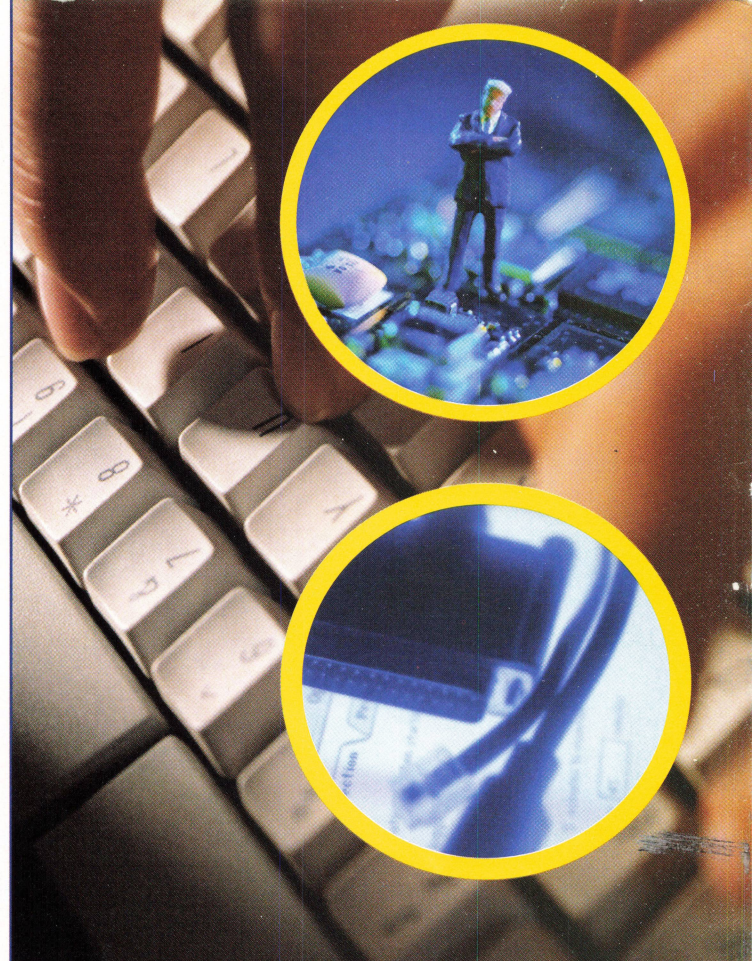
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